SOUTHERN TEXTILE BULLETIN

VOL. 40 CHARLOTTE, N. C., AUGUST 27, 1931 No. 26

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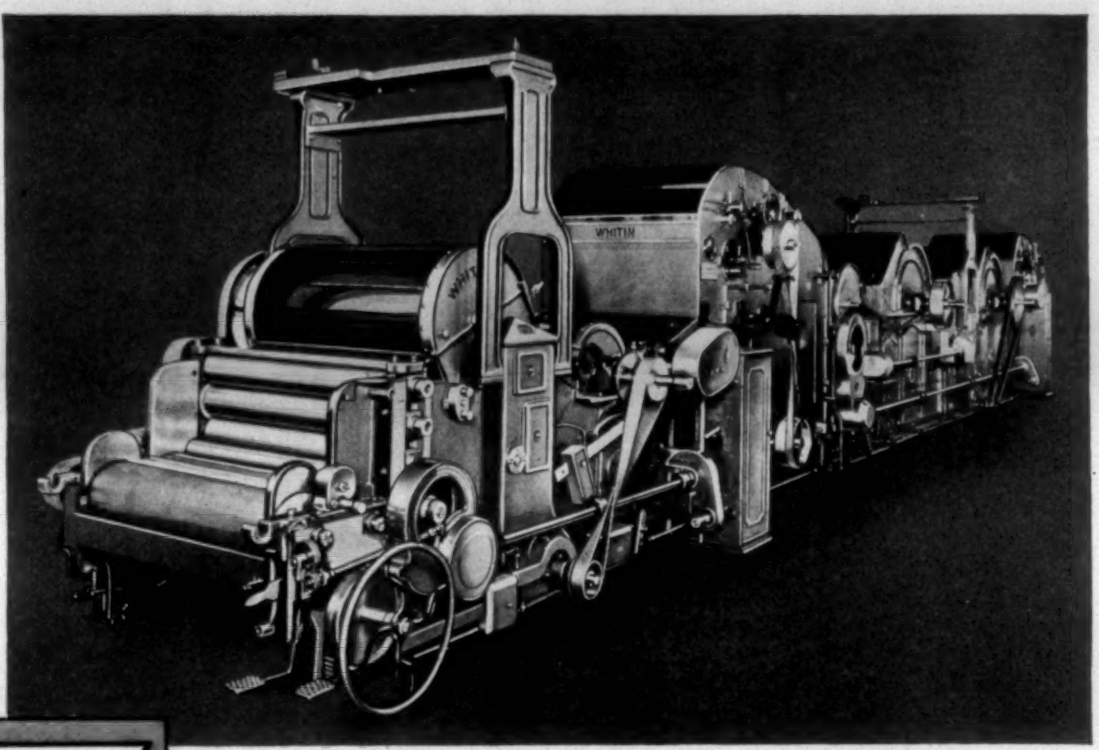

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EVERYBODY'S BUSINESS

BY FLOYD M. PARSONS

Always Expect the Unexpected

THE present is one of those times when the average person is likely to be misled by the foolish actions of the crowd which is looking at the world upside down. In 1929 a pessimist was regarded with pity and suspicion. Today the optimist is looked upon as a sort of imbecile who should be carefully watched.

Disaster which is "inevitable" somehow does not usually happen. There is a motto in Wall Street—"Always expect the unexpected."

The paralysis of hope, courage and judgment is even greater today in many places than it was in the historical depressions of 1873 and 1893. In each of those earlier periods there was a complete collapse of the American credit structure. Our banking system broke down hopelessly. Many of our greatest mercantile and manufacturing corporations failed, and a long list of railways went into receivership, among them being such companies as the Union Pacific, the Atchison and the Northern Pacific.

The total of insolvencies in America in 1893 came close to reaching the two-billion-dollar mark. The United States Treasury was in such bad shape that it was forced to pay its bills with the gold reserved by law to redeem paper currency. The battle between capital and labor reached such a serious stage that the regular infantry had to be called out in several places to control riots and strikes. The United States was immensely in debt to Europe and had to face the strain of panicky drafts on our gold supply.

Today our bankink system is strong and compact. We have such a large quantity of gold that ways are being sought to divert from our country the incoming tide of yellow metal. The nation's credit has not been harmed by the revenue deficit, and most of our great corporations are in an exceptionally sound financial condition. The positions of the United States and Europe are just the reverse of what they were in the 70's and the 90's—we are the creditor nation and Europe the debtor.

Living costs as a whole are now down 12 per cent below where they were two years ago. The head of a family in the United States today can buy as much of the necessities of life with $174 as $200 would have purchased two years ago. People who are working steadily without having had any cut in wages are now better off than they were formerly. Those who have had no more than a 12 per cent cut are even with the game. The purchasing power of bond investors and all who have fixed incomes is larger than in many years.

The drastic decline in the prices of securities has discounted all kinds of adversity. Brokerage loans are down to $1,390,000,000, or only 20 per cent of the peak figure of $6,804,000,000 on October 2, 1929. Wall Street is liquidated to the bone.

Money rates are the lowest since before the war. Although 90-day money may be borrowed at 1½ per cent, the present average yield of stocks is 6.26 per cent, which indicates clearly why there is no longer any great urge for the conversion of stocks into cash. Artificial activity with big volume and high interest rates are the phenomena of a bull-market climax. Dull trading, high yields and low interest rates are characteristic of the dying phase of a long bear market.

In many industries we are now approaching a state of underproduction. The violence of each industrial crisis provides its own remedies. Shelves become bare and output drops far below normal. Eventually buyers reappear and the prices of commodities reveal a new orientation. People who have been refusing to buy at last become fearful and doubt the security of their position. Unemployed capital suddenly seeks to take advantage of low prices, and everyone is activated by the single motive of getting in before it is too late. As a result business speeds up and unemployment diminishes. Notwithstanding the common belief that the upturn will be painfully slow, we should not overlook the possibility of the reverse happening.

The sale of blow-out patches is heavier than ever before, and this means that tires are getting down close to the fabric. Stocks of motor cars in the hands of dealers are the smallest in years. Men are working harder and more seriously. Several of the larger manufacturers of iceless refrigerators have increased their sales this year as much as 500 per cent. Salmon sales in the year ended June 30 were the largest in history. A long list of important companies are doing as good business as they did in 1930.

A short time ago retail sales were 14 per cent behind last year, whereas today they are only 3 per cent below

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The Dyeing of Viscose

BY CHAS. E. MULLIN

Head Division of Textile Chem istry, Clemson College, S. C.

EVERY dyer is familiar with the fact that although there is far less trouble from uneven dyeing rayon today than ever before, the problem of an evenly dyeing rayon is far from solved. The very fact that one of the largest and most progressive rayon manufacturing concerns in the world today has done, and is doing, more research upon the dyeing of uneven rayon than any other one concern, very well proves that even this most progressive firm has not been able to entirely solve the problem of absolutely evenly dyeing yarn.

The more recent attempts to find dyestuffs particularly suited for use upon rayon and the rapid increase in literature upon rayon dyeing is another indication of the present interest in the subject. In spite of all the developments in dyeing properties, Seibert states that "it is questionable whether the improvements in the uniform dyeing qualities have equalled those of the physical qualities."

The Early Ideas

"Viscose dyes like cotton" was the basic idea back of practically all of the early literature on dyeing rayon. Like many other incorrect assumptions or hypotheses, this one was a partial truth, in that all of the rayons (nitro, cuprammonium and viscose silks) can be dyed by the direct cotton and all other classes of dyes which dye cotton. However, unless some special selection of these dyestuffs is made, and these are applied by certain special methods, the best results are never obtained on rayon.

In other words, "viscose dyes like cotton except——." Well, that except covered so much that it was responsible for a very large part of the troubles encountered by the rayon dyers, and therefore, this voluminous literature. The uneven character or dyeing properties of the early rayons themselves was responsible for almost all of the rest of the trouble and literature.

The First Step Towards Success

It was only when the real dyers and chemists began to study the exceptions to the formerly accepted hypotheses concerning rayon dyeing that any start at real progress was made in the selection of dyes for viscose, and the development of special methods for their application to this fiber. Just who first recognized and accepted these exceptions is very difficult to decide. Some of the exceptions were first recognized by one person, some others by another, probably along a quite different line. Sooner or later a lot of these exceptions developed into ideas, and the hypotheses plus research developed into articles and papers in the technical literature. The result was the birth of a lot of new ideas and hypotheses on rayon dyeing. One of the first papers upon the subject appears to have been that of Wilson and Imison. It is true that the theory advanced in this paper is no longer accepted, but it undoubtedly formed the basis of our later advances.

But no matter who first got these ideas, it was Whittaker of Courtaulds, Ltd., Droylsdon, near Manchester, who had the pleasure of first working the thing out, and definitely proving that in the dyeing of viscose some of the most widely accepted axioms of cotton dyeing were exactly reversed. Whittaker gave us the first real tests (capillarity number tests, etc.) for the selection of dyestuffs most suitable for viscose. Later he improved upon these first tests (temperature range tests) and then developed a method (by means of *B*-naphthol) whereby it is possible to correct the shade of unevenly dyed goods to some extent; or by a very similar process, to apply the uneven dyeing colors to viscose in a sodium chloride-naphthol bath so as to obtain more level colors.

We are indebted to Hall for methods of preparing the uneven dyeing rayon so necessary to make tests upon the leveling properties of the direct dyes on viscose. This uneven dyeing rayon is prepared from the normal yarn by a strongly acid or alkaline treatment.

The Temperature Effect in Manufacturing

In connection with some recent experiments upon the effect of pH in the scouring of viscose, upon the shades obtained on dyeing the scoured rayon with direct cotton colors, I found that the temperature factor in the treatment of rayon is far more important than I had previously believed possible. I believe that I am not the only person who has failed to grasp the extreme importance of even small variations in the temperature of various rayon processes, even such simple operations as drying.

However, the more we consider the matter and know of rayon manufacturing and related processes, the more reasonable are these variations of rayon with temperature changes. To begin with, it has long been known that when mercerized cotton is dyed, before it has been dried, it assumes a somewhat different shade from the same yarn dyed after drying. It has also been shown that when the mercerized yarn is dried at a high temeparture, say 125 deg. C. (257 deg. F.) it gives a different shade from either that dried at rom temperature or dyed before drying, as above.

Furthermore, it has recently been shown that the dyestuff affinity of even ordinary cotton is considerably affected by the singeing operation so often given to cotton goods in the finishing process. Under certain conditions the singed cotton dyes so much lighter in shade than the normal unheated cotton, that this method has been suggested as suitable for the production of two-shade effects on certain cotton pile fabrics.

Of course it is very true that mercerized cotton is not viscose by any means but after all they do have certain things in common, in that in both cases the cellulose has been in combination with sodium hydroxide and then regenerated, leaving the cellulose in a special state or condition, probably differing from ordinary cellulose more physically than chemically. The regenerated mercerized cotton resembles cellulose from the viscose in many respects.

On the other hand, in the singeing process the cotton is subected to a very considerably higher temperature than at any stage of viscose manufacture, but the contact is only momentary—and hardly that. Also the normal cotton in the singeing operation is not in anything like as labile a condition as either the mercerized or viscose regenerated cellulose.

Crow has discussed the effect of temperature and other variations in the viscose manufacturing process and, while many of these other variations certainly have a very considerable effect upon the chemical and physical properties of the rayon, he mentions the temperature variable more often than any other. He points out that, just as the uneven saturation of cotton with the caustic soda solution in the mercerization process will cause uneven dyeing mercerized yarn, so too will unevenly saturated cellulose pulp cause uneven dyeing viscose yarn.

The temperature at which the soda-cellulose sheets are shredded undoubtedly makes a considerable difference in the dyeing properties of the yarn and Crow states that when the soda-cellulose crumbs are aged at a low temperature, the rayon is more even dyeing that when these are aged at a higher temperature.

It is well known that even a few degrees difference in the temperature at which the cellulose xanthate solution is ripened makes a very great difference in the time necessary to reach a given stage or degree of ripeness. Crow states that the riper the viscose solution, the less the absorption of dyestuff by the yarn, but the brighter the shades obtained. Therefore, the well recognized importance of temperature control in the ripening process. Even the temeparture of the spinning operation, and the temperature of the spinning and precipitating solutions, are important in rayon manufacture.

TEMPERATURE EFFECTS IN SCOURING AND DYEING

In connection with my own researches of the dyeing of viscose, I find that the temperature effect in the scouring of rayon is extremely important and, in the same way, it is an extremely important factor in the dyeing also, especially where compound shades are being applied.

Every good dyer knows that no two dyestuffs have the same identical dyeing characteristics on cotton, rayon, or any other fiber. One of these variable characteristics is the speed of exhaustion of the dye from the bath, and apparently at least some of the dystuffs vary even more widely in this respect on rayon than they do on cotton. Therefore, the importance of close and accurate temperature control in the application of all dyestuffs to rayon, especially where it is desired to match the shade in the least possible time.

This result should not be unexpected in the case of viscose, as Whittakers "temperature range test" for the selection of dyestuffs most suitable for use upon viscose, is based entirely upon the difference in the mutual affinity of the fiber (viscose) and dyestuff for each other at various temperatures. This test points out the importance of entering each lot of goods at as near the same temperature of the bath as possible, and of bringing up the temperature at the same rate of speed, etc.

Weltzien and Gotze also investigated the effect of temperature in dyeing viscose, and points out the quantitative relation between the temperature of the dye bath and the absorption of dyestuff. They found the degree of dispersion of the dyestuff in the dye bath of little importance but believe that the most level shades are obtained under the conditions which give the greatest absorption of dyestuff. They state that all substances which produce an increase in the amount of dyestuff taken up by the viscose favor a more even dyeing and vice versa. They advance some interesting hypotheses to explain this phenomena.

Hoz confirms Whittaker's results as to the temperature range test for the suitability of dyestuffs for use upon rayon. He points out the necessity of dyeing the rayon at the boil for at least a short time, say 10 or 20 minutes, even though the maximum absorption of dyestuff is at a lower temperature, say 140 to 158 deg. F. (60 to 70 de. C.).

Seibert substantiates this point of boiling the goods after holding the bath for some time at a lower temperature and states that with the dyestuffs most suitable for rayon, some color is stripped off of the goods at the boil. But this dyestuff is again absorbed when the sodium chloride or sulfate is added to the boiling dye bath.

In dyeing mixtures of viscose and cotton the same depth of shade and tone, Landolt prefers to enter the goods into the 30 to 1 dye bath containing 5 to 15 per cent of Glauber's solt at 86 deg. F. (30 deg. C.), and slowly raise the temperature to 122 or 140 deg. F. (50 to 60 deg. C.). Landolt also found that when viscose-cotton mixtures are dyed in the presence of a very large amount of salt, for example in a bath containing 150 grams of Glauber's salt per liter, the cotton tends to take up many dyestuffs more strongly while the viscose is paler. In using this method, which has not been thoroughly investigated, he suggests entering the goods at 104 deg. F. (40 deg. C.) and slowly raising the bath to 176 deg. F. (80 deg. C.).

Landolt suggests a method of avoiding the difficulties often encountered in dyeing uniform shades on viscose-cotton goods, and of dyeing the cotton a darker shade than the viscose. He believes that this difficulty may be overcome by the manufacture of a viscose yarn with less affinity for direct dyestuffs than the present product. The fact that, as a general rule, the longer viscose solution is aged the less its affinity for dyestuffs, indicates that this factor may be controlled to some extent in the ripening of the viscose, however, unforunately the elasticity of the thread is also usually decerased by long ripening. Another method of altering the color of the dyed rayon is by controlling the surface of the yarn (cross section) by means of variations in the composition of the precipitating bath.

In the recent paper by Seibert, "time and temperature" tests for the selection of dyestuffs most suitable for rayon are described. The tempeerature tests are somewhat similar to those of Whittaker and again point out the importance of temperature control in dyeing. Seibert's work was done in the dyestuffs technical laboratory of the DuPont Company and is probably the most complete study of the problem of selecting special dyes for viscose yet made in America. The result has been a real contribution to the literature and several new dyestuffs especially adapted for dyeing viscose.

In connection with the action of different akalies upon viscose, such as in the mercerization of cotton in piece goods containing viscose, Hall has very plainly shown that the effect upon the various properties of the viscose varies with the temperature of application, as well as with the particular alkali used. Surely this is direct evidence that the temperature factor is an important one in the alkaline (or acid) treatment of viscose.

Every study of this problem that has been reported in the literature more or less directly points out the importance of very close temperature control in the manufacture and dyeing of viscose. If temperature control is so important in the various manufacturing steps mentained, and in scouring and dyeing, is it not logical to assume that it may equally, or even more important in some of the other processes, such as in the desulfurizing, bleaching, neutralizing, etc.? An ounce of prevention is worth far more than a pound of cure. It is undoubtedly much cheaper to install the best temperature control apparatus where it is needed, than to correct uneven dyeing rayon, or to level the shade of unevenly dyed rayon, in the course of a long period of time.

pH CONTROL IN DYEING RAYON

In connection with the effect of pH in the application of the direct dyes to viscose, I have recently shown that while this factor is not always as important as the temperature factor, it is of considerable importance and, in order to secure the best results (match) in the shortest possible space of time, should be at least roughly controlled. While it is certainly not necessary to control the pH of the dye bath to the *n*th degree, it is desirable to hold it within a range of, say, one pH unit.

Many dyers are inclined to fear pH control for the reason that they are not entirely familiar with either the theory or methods of procedure and, for that reason, are reluctant to use it. But, as has been repeatedly pointed out, these same dyers use a radio and enjoy it without ever attempting to understand the theory. Yet even a very complicated and accurate electrometric pH determination apparatus is no more complicated than a good radio; and in the case of colorimetric pH control, the method is not nearly as involved and tedious as matching shades on a two-fibered piece of goods, such as cotton and rayon, in a single dye bath. It is much simpler for the average trained dyer than the accurate adjustment of a radio set.

It is simply a matter of matching the color of two solutions, and who is bettter suited to do this than a dyer? Yet for most routine dyeing operations, where the same formula is in use for some time, colorimetric pH control of the dye bath is all that is needed in order to secure satisfactory results. At least some dye houses have adapted a more or less uniform procedure for the control of pH in dyeing, and use the same pH for all dyeings on any one type of fiber, except in special cases where some change is necessary.

pH IN SCOURING RAYON

But not only in the dyeing of rayon is pH control necessary or at least desirable. It has recently been shown that the variations in pH in the scouring of rayon varies the shade to at least some extent when the yarn is dyed with direct dyes, and probably all others. If pH control is important in the scouring of rayon, and it most certainly is, where the most uniform product is desired, it certainly appears at least plausible that it is also important in the bleaching, desulfuring, neutralizing and other wet finishing treatments of the yarn.

It is well known that the most progressive rayon manufacturers, both in America and abroad, have been and are investigating the effect of pH control in many steps of the rayon manufacturing process. However, as yet none of them have published anything regarding their results, which probably indicates that they have obtained very good results. At least I have not heard any definite word that the results have been negative. All right, if the rayon manufacturer has obtained a more uniform product in his plant by means of pH control, is it not reasonable to assume that you may obtain more uniform results in yours by the same methods, properly applied?

VARIOUS ALKALIES ON VISCOSE

Hall's work has shown that while both the pH and temperature of the alkaline baths used to treat rayon are important, it is certainly not the only factor to be considered. Much more unexpected is the fact that the different alkalies, even in the case of such closely related elements as sodium and potassium, have a very considerably different action on the properties of the viscose yarn.

The fact that Hall is able to mercerize cotton in the presence of viscose by means of a caustic potash solution, with a much less drastic action on the viscose present than when caustic soda is used, at once suggests the substitution of the potassium alkalies, for the corresponding sodium compounds, in many rayon finishing and dyeing processes where the price of the more expensive potash compounds is not prohibitive. This applies to dyeing just as well as in other processes and appears to give particularly good results in vat dyeing, where the alkalinity (pH) is sometimes rather high and has been known to delteriously affect the rayon yarn when caustic soda was used.

Seibert confirms my views that the addition of some alkali to the dye bath tends to give more even shades on viscose. He mentions 1 or 2 per cent of soda ash (58 per cent) and one pound each of olive oil soap and double sulfonated castor oil)35 to 50 per cent oil) for each 100 pounds of rayon in a 400 gallon dye bath.

LEVELING UNEVEN RAYON

A somewhat unexpected fact in connection with the level dyeing of rayon is that Seibert has found that when the uneven dyeing viscose goods are treated for 15 to 60 minutes in a bath containing 0.5 to 3 per cent of caustic soda at 70 deg. to 80 deg. F. (21 to 26 deg. C.), the goods dye somewhat more evenly. It is barely probable that in some cases, under slightly altered conditions, that this treatment might proceed the dyeing in the same bath. In view of the difference in the effect of caustic soda and caustic potash on viscose, it would be interesting to study the effect of the same treatment with the potassium compound, instead of the sodium hydroxide. As Hall has also found sulfuric acid solutions to considerably alter the dyeing properties of normal rayon, the experiments might also well be extended to include the effect of acid treatments on the uneven dyeing rayon.

In this connection it is interesting to note that my friend and collaborator Dr. Richard Feibelmann, of Dresden, Germany, recently brought to my attention the fact that for some reason as yet unexplained, aktivin has been found to have certain leveling effects upon the dyeing properties of uneven or irregular rayon. The uneven dyeing rayon goods should be treated for 30 to 60 minutes at 90 to 100 deg. C. (194 to 212 deg. F.) in a bath containing 1 to 2 grams of aktivin per liter. It is interesting to note that while this suggestion came from Germany, the same phenomena has also been noted in America. In fact Dr. Eugene Schwarz, of Melliand, informs me that he used it with success several years ago.

As most of the readers know, aktivin is an organic chlorine compound, related to saccharin. It is stable in the air under the usual conditions but gives up its chlorine in aqueous solution at about 60 deg. C. (140 deg. F.) in the presence of oxidizable materials. It has recently been used with considerable success in the bleaching of rayon in its manufacture and finishing, and it is believed that the above note on its effect upon the dyeing properties of uneven rayon may explain the statement that viscose bleached in this manner is more even dyeing than that blached with either sodium or calcium hypochorite. A peculiar fact is that aktivin is not suitable for bleaching Celanese brand yarn. The fact that it is necessary to give the aktivin bleach at a considerably higher temperature than the usual hypochlorite bleach may be one of the reasons for the more level dyeing properties of the aktivin bleached goods.

UNEVEN DYEING AND OXYCELLULOSE

Seibert believes that, as a class, the vat, sulfur, and azoic (naphthols and naphthanils) dyestuffs give more level shades on uneven rayon than the basic, diazo and direct dyestuffs.

In connection with the uneven shades often obtained on all of the rayons with the basic and direct dyestuffs, it should be pointed out that this may be caused by even slight variations in the oxycellulose content of the yarn. When we remember the ease with which cellulose may be oxidized in the presence of alkalis, or in an alkaline solution, that it is subjected to such an alkaline treatment in each of the three methods (nitro, cupra and viscose) of manufacture, and the effects of oxycellu-

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INSTITUTE FOR RESEARCH IN SOCIAL SCIENCE

Will Advance 1 Cent Above Market Price of Cotton

Washington.—Arrangements for supplemental financing of the American Cotton Co-operative Association, on a basis of which cotton co-operatives would be able at present price levels to advance grower members for deliveries of the 1931 crop an amount equal to 1 cent per pound less than the market price at point of delivery, were announced by the Federal Farm Board.

Culminating a series of conferences held with the board of directors of the co-operative association the board, in announcing the financial arrangements, stated that the Government advances will supplement loans from commercial and intermediate credit banks, which account for the greater part of the co-operatives' finances. It is understood that commercial banks meet the same terms of the intermediate credit banks, which usually advance about 60 to 65 per cent of the market value of the product.

Co-operative associations marketed a little over 2,000,000 bales of last year's cotton crop, and Carl Williams, vice chairman of the Farm Board, said that he expects the farmer-controlled organizations to handle over 3,000,000 bales this year.

Marketing associations can change the rate of advance of "1 cent per pound less than the market at point of delivery," at any time conditions justify, such procedure, Mr. Williams said. Last year co-operatives advanced their members 90 per cent of the market price, with the price of cotton at that time around 12 cents a pound. The year before, a flat advance of 16 cents per pound was made to member growers by co-operatives and the Cotton Stabilization Corporation in an effort to peg the price of cotton at that level.

At the conferences held by the board last week on the question some of the co-operative leaders and officers of the American Association urged that the board permit an advance equal to that of last season as an inducement to members for keeping their cotton with the co-operatives, thereby making a larger holding movement, it is understood. It was argued that otherwise members would be inclined to let their cotton go at the market price in order to receive enough money to meet obligations. Just how much of an opportunity the low advance compared with the market will afford grower members of the co-operatives to pull out of their debts cannot be foreseen by cotton men here. They hold that the grower's equity in the cotton after the payment of the advance amounts to about $5 per bale.

Other co-operative leaders at the conferences did not believe in a high advance and wanted to keep free of any idea of making a purchase. Co-operatives, as a whole, are holding about 2,000,000 bales of last season's cotton upon which the 90 per cent of the market advance was made and they are understood to have favored the grower member carrying more of the burden under present low price conditions.

Improved consumption of cotton during the coming market season was foreseen by Mr. Williams. He said that at least 13,000,000 bales and maybe 14,000,000 bales will be consumed from the new crop, compared to a consumption last year of 11,100,000 bales. The vice chairman declared that he based his forecast of increased consumption on the fact that "reduced cotton stocks necessitate replacements."

Gray goods stocks in warehouses decreased from 488,000,000 yards at this time last year to 250,000,000 yards on August 1, he asserted, adding that this decrease amounted to about 400,000 bales of cotton. About the same difference in stocks has occurred in cotton dress goods, it was added.

Status of Mills Is Unchanged

New York.—The English mill situation does not show any appreciable change, according to the New York Cotton Exchange Service. Yarn sales are about equalling current output, but output continues very low. Cloth inquiry is rather better, but most of the offers are at unworkable levels. India fails to show any recovery from the standpoint of purchases of Lancashire cloths. The drastic economies proposed by the British Government, designed to hold confidence in British finances, overshadow British trade.

"Germany cables that mill activity in that country is tending downward," says the Exchange Service, "as the slump in raw cotton prices, added to the existing difficulties, has greatly disturbed confidence in values. France reports along unfavorable lines, advising that spinning activity is declining slightly, weaving activity is about unchanged, yarn stocks are increesing, and, unless the situation improves, further curtailment will be unavoidable.

"Italy, on the other hand, cables that spinning and weaving activity are increasing slowly, and, while yarn and cloth prices are unprofitable, prospects are that the present rate of activity will be maintained for the next few weeks. Belgium also reports in a little more cheerful tone than heretofore. It says that activity continues unchanged and a slow improvement seems to be in sight. Czecho-Slovakia reports that yarn demand has continued to improve, and spinning activity is now averaging almost 90 per cent of normal. While conditions in Europe are very irregular and very unfavorable on the whole, there is no general and uniform trend toward a more adverse situation such as was the case a few months ago, but on the other hand there appear to be some slight tendencies toward recovery in various directions."

Hunter Sees Slight Gain

"Commencing the middle of July, each week's sales with us have shown a slight gain over the previous week's. Though this week's gain over the previous two weeks is not large, it is quite striking that there should be any gain at all, as we are still in a waiting market," says the Hunter Manufacturing & Commission Co.

"Realizing that we are in a waiting market and the possibility that the trade may not be ready to begin to operate in a large way before Labor Day, selling agents, taking into consideration the strong spot situation on print cloths and certain other lines, have recommended the maintenance of a steady market in the interim and their efforts in that direction appear to us intelligent, praiseworthy and deserving of some consideration from the trade.

"We do not see any reason for changing our minds in the slightest regarding September-October business. We are looking for a large volume especially as the cotton situation has held back a fair part of this buying which, under normal conditions, would have already been placed by this time.

"The feature of our business this week was the volume on some of the osnaburgs and coarse sheetings for the manufacturing trades where sales were much in excess of production. There was moderate activity in print cloths and fair activity in bag trade sheetings."

Practical Textile Designing

BY THOMAS NELSON

Dean of The Textile School N. C. State College

This is the eighth of a series of article on designing by Dean Nelson, a recognized authority on the subject. The articles are extremely practical and will be found particularly helpful by the younger men who are just beginning to study designing. The ninth article will appear next week.—Editor.

STEEP TWILLS

All ordinary twills run at an angle of 45 degrees, but steep twills which are derived from them run at a greater angle and are constructed by using every alternate thread, or every third or fourth thread according to the grading required. The steep twills on which the harness shafts can be reduced are often used to produce stripes in cloths. They may be used for the whole stripe or in combination with another thread which generally weaves plain, or some other weave different to the steep twill. In this case the thread for steep twill can be made from two-ply yarn to alternate with a single thread. The two-ply thread covers up the single thread, and the steep twill gives a good effect in the cloth. The 45 degree twills are used regularly, the steep twills generally being used for some special purpose or effect as in stripes, etc. Examples of each of the various degree twills will be given for illustration.

In a 52 degree twill two threads move consecutively as in a 45 degree twill, then a thread is skipped.

Fig. 110 illustrates the regular $\frac{3\ 1}{2\ 2}$ twill weave.

Fig. 111 illustrates the 52 degree twill derived from this weave. The pattern is complete on 1* threads and 8 picks.

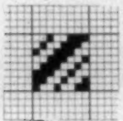
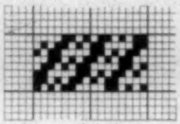


Fig 110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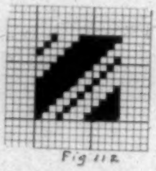
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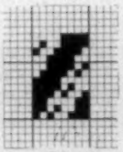
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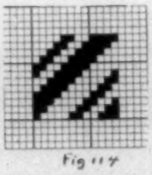
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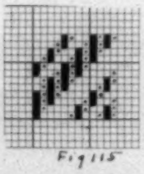
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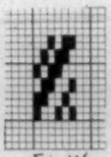
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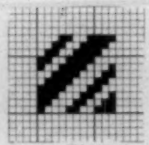
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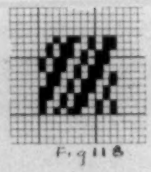
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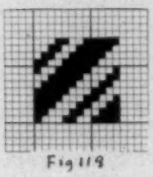
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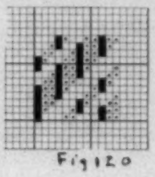
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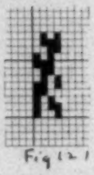
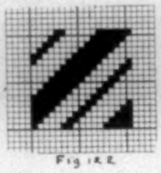


Fig 121

Fig. 112 illustrates the regular $\frac{6\ 1}{3\ 2}$ twill weave.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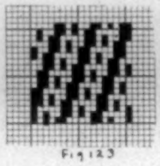
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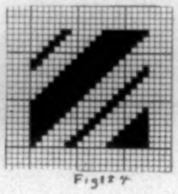
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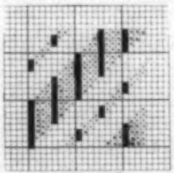
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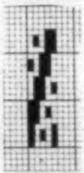
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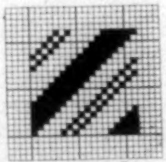
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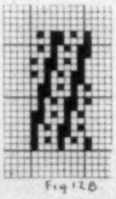
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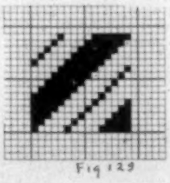
Fig 129

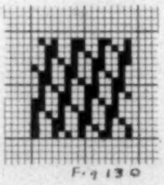
Fig 130

Fig. 113 illustrates the 52 degree twill derived from this weave. The pattern is complete on 16 threads and 12 picks.

63 DEGREE GRADING

The 63 degree steep twills are used more than any other steep twills. They are constructed by using every alternate thread of a regular 45 degree twill. When the 45 degree twill repeats on an even number of threads the full repeat of the 63 degree twill will be complete on half the number of threads, but when the 45 degree twill repeats on an uneven number of threads the full repeat of the 63 degree twill will only be complete on the full number of threads. This principle is illustrated by the following examples.

Fig. 114 illustrates the regular $\frac{4\ 2}{2\ 4}$ twill weave.

Fig. 115 illustrates the same weave having every alternate thread in different type.

Fig. 116 illustrates the 63 degree twill derived by using the solid type. Pattern complete on 6 threads and 12 picks.

Fig. 117 illustrates the regular $\frac{4\ 2}{2\ 3}$ twill weave.

Fig. 118 illustrates the 63 degree twill derived from this weave. The weave being on an uneven number of threads, the full number of threads are required for repeat of weave in steep twill.

70 DEGREE GRADING

These twills are constructed by using every third thread of a regular 45 degree twill. When the threads in the regular twill are devisible by 3, only one-third the

(*Continued on Page* 24)

Night Work Prophecies

BY C. M. BISSELL

Secretary, Saxon Mills, Spartanburg, S. C.

SOME four or five years ago the idea of running cotton mills at night was conceived in the mind of some smart manufacturer and soon it was born and everybody began the practice. Like a great many other ideas this idea was "born in sin" and "conceived in iniquity." It was a wrong idea—wrong from every point of view. Wrong—and a sin against God and man. I want to say right here that though this writer holds no membership in that grand old organization, "I Told You So's," yet he was against the practice of the night and day running of cotton mills from the very first. He is also against the night and day operating of *any* business, except that business be one of necessity. He also predicted just what has happened, that we would soon "lard" the earth with cotton cloth. That the mills, by adopting this practice of continuous operation, would soon be not operating in any manner whatsoever. Almost all of this prediction he has lived to see come to pass. The balance is in the offing.

The main idea of this day and night operating of mills was, of course, to cut down the "overhead." That reasoning was, in itself, correct. What we did not take into consideration was the fact that in cutting our "overhead" we would at the same time cut our throats.

At first a very few mills operated on this continuous schedule. Like measles, smallpox and itch, the idea and practice was very, very contagious. A. saw the lights of B's mill at night and was immediately overcome by the desire to burn some lights himself. He did. Then C saw B's lights—and was awakened by the rattle of B's looms and he began to burn lights—and so on through the alphabet to the end.

And just about the time that everybody was sitting pretty and we had cut our "overhead" until we had just about whittled off everything cutable, we became alarmed. Something was wrong! There began to be a getting together of the "powers that be" to see what was the matter. We had begun on our throats! For, absurd as it might seem, the world had absorbed about all the cloth they (or it) wanted. Cloth was beginning to be a drug. Nobody wanted cloth. Of course, they would take it—as a gift. Worth Street would, as a matter of accommodation, take our cloth at a *price*. And such a price! And then we sat down, that morning after, and began to realize that through our *greed* we had just about fixed the old Golden Goose again. While we had not killed her outright—we had to admit that she would probably not lay again for quite a spell. We also began to think that we were in grave danger of being drowned in our own gravy. It certainly did look like we were liable to be hoisted by our own petard! And we got wild-eyed. We began to run, but in a circle. And we called meetings, opened with prayer.

The writer of this article is a Methodist. He was born believing that to "get" religion you must show some signs of wanting it. That to "come through" you must wrestle—at the mercy seat. He still believes that. And certain of our mill owners, presidents and treasurers began to evidence certain signs that they were repenting; that they had seen their sin and were ready to turn from that sin and renounce it all. And as the situation began to be acute, they began to "cry out" and to promise high Heaven that if they could be forgiven for their *greed* they would renounce that greed, both now and forevermore and to promise that never again, so long as the heavens stood and the G. O. P. elected Presidents, would they ever, ever again be guilty of night and day operating of their mills. It was a glorious meeting!

But there were a certain number of these bad boys—these mill owners, presidents and treasurers, who stood outside the church while this meeting was going on, and watched the conversion of these beings with great interest, and said among themselves that it was a mighty, mighty nice thing. And they gave the "no-more greed" movement their hearty and unctious approval, but they *did not join*. On the other hand they saw a "main chance." They realized that for 80 per cent of the mills that had been making this continuous schedule to cut that schedule in half would be nothing short of a blessing from High Heaven for them! And these 20 percenters, making from 35 to 40 per cent of the cloth produced, went home and greased up everything that could be greased; put her in high and "went to it!"

And these 20 percenters have done their part—and nobly—to undo all the good the 80 percenters did or hoped to do. They have, in a great measure, done their damndest to nullify the good that a discontinuing of night operating would have done. But, far and above that fact, is this fact—they, by reason of their reduced "overhead" have been able to fix the price of cotton cloth—and to fix it so low that these 80 percenters cannot compete! Now, there's a pal for you!

I have heard men say, good men and true, that the plea that the 80 percenters made and are making, that the closing of their mills to night running was from their violent love for humanity—an act of charity toward their fellow men, from a humanitarian view—was ridiculous! I say so, too! I am not such a liar as to maintain for one instant—or the fraction of an instant—that they *all* did so. (I know one who *did*—and who long before the matter of eliminating night running had been agitated—was working for this elimination so far as his mill was concerned.) But the majority of these 80 percenters stopped running at night because they *had to do so*.

And, on the other hand, I hear men praise to the highest the 20 percenters who are now operating their mills both day and night. I hear men praise them because their act, during a time of depression, when men are out of work, is doing its bit to relieve this situation. I hear men say that. And they, these men who praise these 20 percenters, point out the great, glorious humanitarian element in this night running!

And I want to say that it is just as ridiculous to say that these 20 percenters are running their mills day and night from a humanitarian point of view as it is to say that the 80 percenters discontinued the running of their mills day and night from a humanitarian point of view. Neither position can be defended—and I don't care if the whole world tries to defend either sinner.

But I do say that of the two groups the 80 percenters who, seeing the error of their way, repented and turned away from their sinning—(and I don't give a Tinker's Damn why they turned) are worthy of the respect of

(*Continued on Page* 15)

Full-Fashioned Hosiery Stocks Reduced

STOCKS on hand among full-fashioned hosiery manufacturers as of June 30 amounted to between 3,800,000 and 3,900,000 pairs, according to a report just issued by Dr. George Wharton Taylor, head of the hosiery division of the industrial research department of the University of Pennsylvania. An improvement in the stock position in the industry was reported for the first six months of 1931.

"The improvement was caused more by changes that occurred in the type of stock than by the quantitative decrease," the report states. "The importance of the decrease in total stocks, however, should not be minimized. While the decline since February, 1930, has been at a fairly constant rate its check in June should not be overlooked. Particularly is that important in view of the restricted production schedules that prevailed during June."

Data Based on 90 Per Cent of Industry's Stock

The report considers the stocks of women's full-fashioned hosiery on hand at manufacturing establishments on June 30, 1931. It is based on detailed information covering 3,431,251 dozen pairs of hosiery, which approximate 90 per cent of the total stock held at the mills, and upon monthly hosiery data furnished by the United States Department of Commerce. It has been prepared by the industrial research department of the University of Pennsylvania, in co-operation with the National Association of Hosiery and Underwear Manufacturers.

"On July 17, 1931, a preliminary report, based upon the June 30 stock survey, was issued. At that time, reports had been received for a stock of 2,555,249 dozen pairs of hosiery. Since then, additional information has been secured, so that the present final report of stocks as of June 30 is based upon a total of 3,431,251 dozen pairs of women's full-fashioned hosiery. Because of the much larger total considered in the present report, particular relationships differ somewhat from those of the July 17 release. The basic findings of the preliminary report, however, have not been changed by the more recently collected data.

PERCENTAGE OF TOTAL STOCK OF PARTICULAR WEIGHTS OF HOSIERY CLASSIFIED BY GAUGE

Gauge	Chiffon	Semi-service	Service weight	Others
36 and under	.1	.2	—	14.4
39	5.1	16.1	28.2	21.9
42	47.2	70.4	68.8	61.1
45	35.4	11.3	2.2	2.6
48	7.9	.8	.1	—
51	1.5	—	—	—
No gauge	2.8	1.2	.7	—
Total	100.0	100.0	100.0	100.0
Total dozen pairs	1,882,837	1,049,448	172,524	175,384

Grand total, dozen pairs, 3,280,193.

"The June 30 survey of stocks was preceded by a similar study as of January 1, 1931. At which time the total stock of women's full-fashioned hosiery at producing establishments was estimated at 4,120,127 dozen pairs. The monthly hosiery reports of the Department of Commerce, particularly the section of each of these reports that lists stock for identical mills for each current month and its past month, have been used to compute monthly changes in stock, since the first of the year.

Output Down 17 Per Cent

"During the first half of 1931, production of full-fashioned hosiery was 17 per cent below the output of the same period in 1929 and 15.4 per cent lower than in 1930. In this connection, firms that provided data reported for June, 1931, a production that they estimated at 66.9 per cent of capacity. These firms presumably represented a large sample of total production since they reported a June production of 1,604,745 dozen pairs.

"The estimates for orders booked by mills showed a very slight decrease in the first six months of 1931, as compared with the same months of 1930, and a decline of slightly less than 6 per cent when compared with 1929. From the Department of Commerce data it appears that the demand for hosiery did not fluctuate greatly since 1929. Of course, decreased hosiery prices may have been instrumental in keeping the demand from materially declining.

"The total stock reported as of June 30 was over 3,400,000 dozen pairs. However, from certain establishments no reports were received. Rough estimates of stock on hand in the non-reporting mills utilized with the reports received indicated a total stock at all full-fashioned mills of about 3,900,000 dozen pairs. A conservative estimate of stock of women's full-fashioned hosiery at the mills as of June 30, 1931, would place stocks at more than 3,800,000 and possibly at close to 3,900,000 dozen pairs.

Stocks Estimated at 3,900,000 Dozen

"Both the June 30 and January 1 stock surveys of the industrial research department covered only the stocks held at full-fashioned hosiery manufacturing plants. Certain seamless hosiery manufacturers frequently purchase fashioned hosiery in the gray to be finished in their own establishments. The amount of full-fashioned stocks in seamless plants is not included in the stock totals mentioned in this report.

"If the estimate of 3,900,000 dozen pairs is accepted as the stock of women's full-fashioned hosiery at the mills on June 30, then the stock reported in this present survey, 3,431,251 dozen pairs, represents about 88 per cent of the total stocks at the mills. The sample for this survey represents 89.9 per cent of the total stock of June 30. It appears that the data upon which this survey is based must be a large sample of total stocks. Of the more than 3,400,000 dozen pairs reported on June 30,

PERCENTAGE OF TOTAL STOCK OF EACH GAUGE REPRESENTED BY PARTICULAR WEIGHTS

	Gauge							
Weight of hosiery	36 and under	39	42	45	48	51	54-57	No. gauge
2-5 thread	7.6	27.3	47.9	84.0	94.6	98.6	100.0	79.7
6-8 thread	6.9	48.0	39.9	15.0	5.2	1.4	—	18.5
9-thread and over	—	13.8	6.4	.4	.2	—	—	1.8
Others	85.5	10.9	5.8	.6	—	—	—	—
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total dozen pairs	29,478	352,241	1,852,505	793,151	157,304	28,670	520	66,324

Grand total, dozen pairs, 3,280,193.

54.5 per cent was 42-gauge hosiery, while 23.8 per cent was represented by 45-gauge stockings.

"Identical firms reporting on both January 1 and June 30 decreased their stock of 39-gauge hosiery from 15.4 per cent to 10.9 per cent of total stocks and increased their proportionate holdings of 45-gauge stocks from 19.9 per cent to 24.4 per cent of total stocks. This change in the make-up was the only major shift in the gauges of stock during the first six months of 1931. It is true, however, that an increase may occur currently with either an increase or a decrease in demand, depending upon the course of production and shipments.

PLACE OF TRAM SILK

"The use of both tram silk and hard twist silk in the knitting of hosiery makes important a classification of 65 per cent of the total stock was represented by tram 65 pe rcent of the total stock was represented by tram silk hosiery; by June 30 this proportion had been decreased to less than 44 per cent. Although total stocks were decreased about 9 per cent from January 1 to June 30, it is important to note that tram silk showed a decline of 36 per cent during the same period, while hard twist hosiery increased over 80 per cent. On June 30 the high twist stocks represented about one-half of the total stock in contrast to approximately one-fourth of the total stock represented on January 1. For the period under consideration, then, stocks have decreased, but important changes in the composition have occurred. It has already been noted that 39-gauge stocks have declined, while 45-gauge merchandise held in stock has increased, and in general ,it appears that the so-called low-end merchandise in stock is being replaced by goods having more desirable specifications.

"In addition to securing a classification of hosiery stock by gauge and by type of material, both stock surveys of the industrial research department secured data relating to the classification of stock according to chiffon, semi-service weight and service weight hosiery. No significant changes occurred from January to June in the percentages of total stock represented by these various types. Of 3,280,193 dozen pairs of hosiery for which data relating to weight of thread were secured as of June 30, 57.4 per cent was chiffon hosiery, that it, hosiery knit with silk having from 2 to 5 threads. Semiservice weight hosiery of from 6 to 8-thread silk, represented 32 per cent of the June stock, while service weight hosiery, of 9-thread silk or over and 'other types of material,' each accounted for 5.3 per cent of the total stock.

"So far this analysis of full-fashioned hosiery has considered certain qualtative characteristics of the stocks at the mills on June 30, 1931, with emphasis upon the changes that have occurred since January 1, 1931.

HIGHER SILK TURNS

"On January 1 high twist silk had generally a higher number of turns to the inch than on June 30. At present, 12, 10 and even 8 turns to the inch are often designated as high twist silk. When grenadine silk and other high twist silks were first used in manufacturing hosiery, lack of experience with this type of material resulted in a relatively high output of 'seconds' and irregulars. Individual mills have reported a production of irregular high twist hosiery of from 30 to 35 per cent of the total output when high twist silk was first used. The consequent large supply of irregulars in stock, even on January 1, 1931, made difficult any trading-up policy. It is therefore important to note a decrease in stock of obsolete and irregular merchandise of 31.3 per cent from January to June. While 12.1 per cent of the total stock on January 1 was represented by obsoletes and irregulars, these numbers composing but 9.1 per cent of the June stock. These percentages are for identical firms reporting for both surveys."

Solvay—Fiftieth Anniversary

September marks the fiftieth anniversary of the incorporation of the Solvay Process Company, and with it the establishment of the alkali industry on this continent.

The original thirty ton per day soda ash plant at Syracuse, N. Y., was the beginning of the tremendous industry which now supplies the world-wide market with alkalies in varied forms.

Rowland Hazard was the founder and first president of the Solvay Process Company. It was he who guided it to the acquisition of the American patent rights of Ernest and Alfred Solvay, perfectors of the method of manufacturing soda ash, now known the world over as the Solvay Process.

Pioneer in the American field, the company has been in continuous operation and is the largest manufacturer of commercial alkali in this country, with plants located at Syracuse, N. Y., Detroit, Mich., and Hutchinson, Kan.

In addition to commercial alkalies the company now manufactures an extensive line of related products, including cleansing sodas, calcium chloride and liquid chlorine.

The Solvay Process Company completed the form of organization under which it operates today with the formation, in 1927, of the Solvay Sales Corporation, which has entire control of the sale of Solvay products.

Miller Cites Need for Research Work

The need for fundamental research is stressed by Wallace I. Miller, an official of the United States Testing Company, in the current issue of that concern's monthly publication. Mr. Miller states in part:

"To urge a fundamental research program for the textile industry one needs no more justification than that furnished by the many attempts already made. The failure of all previous attempts can be traced to the inadequacy of the organizations charged with the responsibility of undertaking this task rather than to any doubt of its value or necessity. An analysis of the previous failures and their lack of support, financial and otherwise, indicates an experience which we will do well to profit by.

"Fundamental research is an industry job. That is to say, it is primarily the concern of the industry's executives, although it has been taken over by its technicians. This explains much of the apathy shown by executives when they are asked to give funds for this purpose. The executive group will be the chief beneficiary of the results obtained and should sponsor the undertaking on a scale and in a manner that will make it attractive to those men whose eminence in the field of science is equal to theirs in the sphere of business.

"No executive would dream in these times of marketing a product on a small experimental scale and watch its growth for a period of years before giving it the support necessary to a significant success. He would weight all the possibilities and do it on a big scale or not at all. That some organizations have been willing to try a research program on this small scale is a reflection not on this small scale is a reflection not on the executives whose support is sought but on the vision and stature of the research group.

PERSONAL NEWS

W. S. Griffen has been promoted to superintendent of the Alpine Cotton Mills, Morganton, N. C.

J. B. Wright has resigned as superintendent of the Irene Mills, Gaffney, S. C.

W. S. Evans, from the Arkwright Mills, Spartanburg, S. C., has been appointed superintendent of the Irene Mills, Gaffney, S. C.

C. D. Baker is now overseer of No. 2 filling spinning at the Lancaster Cotton Mills, Lancaster, S. C.

R. P. Barton is now general overseer of spinning, spooling and warping, twisting and the roller shop at the Lancaster Cotton Mills, Lancaster, S. C.

J. C. Childers, graduate of Clemson Textile Department, has recently become connected with the Gossett Mills in Anderson, S. C.

J. W. Roberts is now overseer of weaving at the Angle Silk Mills, the plant being located at Rocky Mount, Va., and not Rocky Mount, N. C., as published through error.

A. S. Thomas has been appointed Southern representative for the Abbot Machine Company, of Wilton, N. H., and will make headquarters at Greenville, S. C.

C. C. Roberts, who has been with the Aiken Mills, Bath, S. C., has been appointed superintendent of carding at the Brookside Mills, Knoxville.

O. R. Johnson, formerly with the Judson Mills, has been put in charge of the weaving at the Brookside Mills, Knoxville, Tenn.

E. A. Franks, formerly superintendent of the Judson Mills, Greenville, who was recently appointed superintendent of the Brookside Mills, Knoxville, has assumed his new duties there.

Joseph C. Cobb, until recently with the Shambow Shuttle Company, and a former secretary of the Southern Textile Association, has been appointed overseer of No. 2 warp spinning at the Lancaster Cotton Mills, Lancaster, S. C.

C. E. Belk, graduate of Clemson Textile Department, for a number of years connected with Government spinning test research in co-operation with the Clemson Agricultural College, and more recently of Belmont, N. C., has accepted the position of assistant superintendent with the Spencer Corporation, Spindale, N. C.

W. S. Porcher, one of the Southern agents for the Whitin Machine Works, was severely injured last week when his automobile was overturned near Rutherfordton, N. C. He suffered serious injuries about the head and one arm was broken at the elbow. He is undergoing treatment at a hospital in Rutherfordton but expects to return to his home in Charlotte within a short time, his condition having shown encouraging improvement this week. Mrs. Porcher and two children were less seriously hurt.

William Lee Has New Accounts

William Lee, one of the best known textile machinery men in the South, has opened offices in Charlotte and will be Southern sales agent for a number of well known machinery companies. Mr. Lee was for 23 years Southern selling agent for Woonsocket Machine and Press Company, and Fales & Jenks Machine Co., having become associated with these companies when he first came to America. He is a native of Manchester, Eng., a graduate of the Manchester School of Technology, and had important mill experience in the mills in Manchester.

In his new connection Mr. Lee will represent the International Devices Company, makers of the "Yarnometer" slub catcher; the Belger Company, manufacturers of "Elistix Rolls" for long draft spinning, Production Increasers for Nasmith combers, automatic roving testers, mechanical sliver testers, roll spacing testers, and skewerless bobbin holders.

He will also represent Hartmann Textile Works, builders of the new Hartmann spinning process for cotton yarns that are spun straight from drawing frame sliver, no roving frames being required. The Hartmann process has a draft performance of 100 to 400, according to the length and uniformity of the staple and is said to be well suited to spinning yarns from staple fibres of artificial silk.

Mr. Lee will also be sales agent for U. Pornitz & Co., builders of vacuum steaming and conditioning machines, underdriven hydro-extractors, vacuum bleaching apparatus, hosiery dyeing machines and hosiery singeing machines.

Hercules Chemists End Research in Germany

Wilmington, Del.—Three Hercules Powder Company research chemists have returned from Germany to the company's headquarters at Wilmington within the past few weeks. They are Dr. E. J. Lorand, Dr. H. M. Spurlin, and Dr. Kyle Ward, Jr.

For the past two years, the Hercules men have been studying cellulose problems in Berlin. Dr. Lorand and Dr. Ward have been at the University of Berlin working with Prof. Hans Pringsheim, and Dr. Spurlin has been at Kaiser Wilhelm Institute studying with Professor Herzog, both professors being well-known cellulose authorities.

The higher fatty acid esters of starch and cellulose, osmotic pressure measurements of cellulose solutions, and new methods of degradation of cellulose have been the main research problems undertaken by the Hercules representatives.

Textile Faculty Prepares for Fall Session

Since the close of the summer session, the faculty of the Textile School of North Carolina State College have been busy visiting textile plants, commission houses and machinery companies, gathering new material and assembling data for their courses in order to give the textile students of North Carolina State College the advantage of the latest developments in the textile industry.

Dr. Thomas Nelson, dean of the Textile School, has visited New York where he spent some time in commission houses and calling on the trade in order to study the fabrics being imported into this country and the trends of style. He has also spent considerable time visiting mills during the summer.

D. B. Hardin, assistant profesor of knitting and designing, is spending several weeks at the plants of Scott and Williams, and the Hemphill oCmpany, studying the latest improvements on Scott and Williams and Banner hosiery machines.

Albert H. Grimshaw, associate professor of textile chemistry and dyeing, has spent the summer in New England States visiting dyeing, finishing and mercerizing plants, and assembling data which will be used in his course next year.

T. R. Hart, associate professor of weaving and designing, and J. T. Hilton, associate professor of yarn manufacture, after visiting a number of mills in this section, will return to the College and prepare work for new courses in color in woven design and manufacturing problems, which they will teach next year.

G. H. Norman, teaching fellow in yarn manufacturing is spending the summer at the Victory Mills, Fayetteville, N. C., where they are making extensive improvements.

T. A. Mott, Jr., teaching fellow in textile chemistry and dyeing, is spending the summer in the laboratory of John Campbell & Co.

The Textile School of North Carolina State College has a highly trained faculty, as every regular member has fulfilled the requirements for an advanced degree in addition to having considerable practical experience in his particular field. Five American and one English textile school have representatives on the faculty. In addition to the above, Professor Hart took work at the A. E. F. University, Beaume, France, following the close of the world war and spent considerable time visiting French mills and museums, especially in Lyons, France, the center of the French silk industry, where Jacquard lived and invented the machine which bears his name.

OBITUARY

W. H. HIGGENBOTHAM

Atlanta, Ga.—W. H. Higgenbotham, who for the past 12 years has been connected with the Southern sales force of the New York and New Jersey Lubricant Company, died at his home here following an illness of several months. He was 58 years of age.

Mr. Higgenbotham had been handling the Georgia and Alabama territory for his company for many years and was one of the best known textile salesmen in the South. He is survived by his widow and one son. Funeral services were conducted at the Trinity Mechodist Church here, in which Mr. Higgenbotham was a steward.

Night Work Prophecies

(*Continued from Page* 11)

those who have to do with textiles. And that 80 per cent are today at the absolute mercy of the 20 per cent. And there remains at this time but one of two things to be done—and that *must* be done and that *will* be done.

And *one* of those two things is that the 20 percenters *must* discontinue their night running.

Or—that the 80 percenters *must* begin night running again.

And if the 20 percenters will not come to the "mourners" bench and agree to discontinue their continuous schedule—and get down to a firm, just, equal footing with the 80 percenters; and if the 80 percenters do go back to this continuous schedule in order to be able to operate—then everybody who knows anything can see the end. As the old lady said when she threw the powder horn into the fire, "*We will all go to hell together.*"

And then the third element in my prophecy will come to pass—that we shall *all* be walking the streets—with our hats over the hole in our pants, before the next cotton crop is harvested.

William Lee

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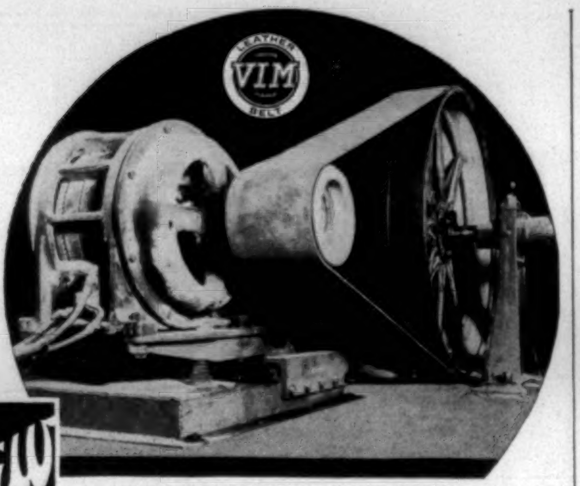

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VIM EFFICIENCY DRIVES

New Cleaning and Blending Feeder

A NEW cleaning and blending feeder has been developed by the Saco-Lowell Shops. They give the following description of the feeder:

"The new machine, designated as F-7 Feeder, has been designed to open, clean and blend the cotton in a thorough manner and, therefore, the production has been held to conservative limits. The machine is quite unique as far as textile mill machinery is concerned, since it is built essentially of steel, the materials other than steel being the stout hardwood slats, the extra strong leather belting, and the heavy canvas used in the aprons.

"The basic structure of the machine is fabricated heavy steel plate, reinforced by steel cross girts so that a very substantial and rigid structure results. There are no riveted joints to work loose and the machine is practically immune to breakage, for all the points which would be subjected to extraordinary stress, especially when using compressed cotton of high density, have been reinforced.

"The aprons are designed to break the cotton into small flakes and in this manner the heavier kinds of dirt are removed in the F-7 Cleaning and Blending Feeder; this is not the case in the coarser opening obtained with the Bale Breaker.

Shafting and Bearings

"Rigidity of moving parts is secured by the use of extra heavy shafting, mounted in dust-proof self-aligning ball bearings which are totally enclosed in dust covers which are so arranged as to permit easy removal when necessary. Special precaution has been taken in the design of these dust covers so that it will be necessary to remove them but twice a year for inspection and lubrication. The idler shafts supporting the aprons are run in oil-less bearings which are likewise self-aligning and dust-proof and require absolutely no attention.

Combing Roll and Doffing Roll

"Both the Combing Roll and the Doffing Roll are constructed of steel and, as previously stated, run in ball bearings. The ends are enclosed in steel shrouds, so that any danger of fires and chokes, caused by cotton wrapping around the ends of the shafts, is very remote. The Combing Roll is of comparatively large diameter. The pins are hardened steel and have a guard so that the cotton cannot wrap around them. The large diameter of the roll increases the combining action of the pins, which has a very good effect on the opening.

"The doffer has leather-tipped blades which have a definite fanning action on the stock; these tend to throw the dust and dirt through the grids.

Cleaning Section

"Under the doffer there is a very efficient cleaning grid composed of fine steel bars, supported by strong steel cheeks. The design of the bars and the manner of their support prevent any bending or breaking of the bars by large lumps of cotton. Under the cleaning grid there is a large dead air dust space. The fanning action of the doffer tips, together with the combination of the cleaning grid and the dead air space, results in a cleaning action at this point which is very efficient as compared with other feeders, which have only a small drawer to retain the trash falling from the stock.

Hopper

"The hopper is entirely enclosed. On the top is a substantial framework for the motor. The top of the

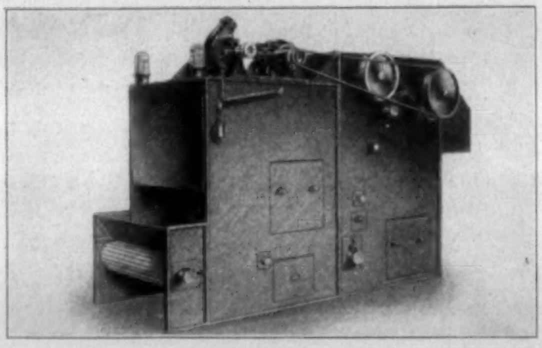

Fig. 1—New Saco-Lowell Type F-7 Cleaning and Blending Feeder, showing hopper feed and electric signal lights. Note the self-contained motor drive and exhaust fan.

hopper is also arranged to take a built-in dust exhaust fan. The removal of the dust at this point results in a marked brightness of the cotton, and in addition to the dust, a worthwhile amount of trash, fine lint, and other floating impurities are removed at the same time. The atmosphere of an Opening Room equipped with F-7 Cleaning and Blending Feeders will be as free from dust and floating atmospheric impurities as any portion of the mill.

CLEANOUT AND INSPECTION DOORS

"Large cleanout and inspection doors, quickly and easily removable, are provided where needed. Through their use all parts are readily accessible for cleaning or inspection. In this manner the under side of the apron, the doffer, and the combing roll, can be reached in an instant.

FEED REGULATION AND CONTROL SYSTEM

"In the standard feeder the cotton is fed into a small hopper which delivers the cotton directly onto the bottom apron. The hopper is automatically closed off by means of a swinging door which serves to retain the dust within the hopper proper. Inside the hopper is a sensitive rake motion which is connected to an electric signal system, which consists of two lights, one red and one green. When the cotton in the hopper reaches a certain low level, the rake moves forward and flashes the green light so that the operator is quickly informed that this particular hopper needs replenishing. When sufficient cotton has been carried to the hopper the red light comes on as an indication that feeding should cease. All haphazard guess-work

(*Continued on Page 23*)

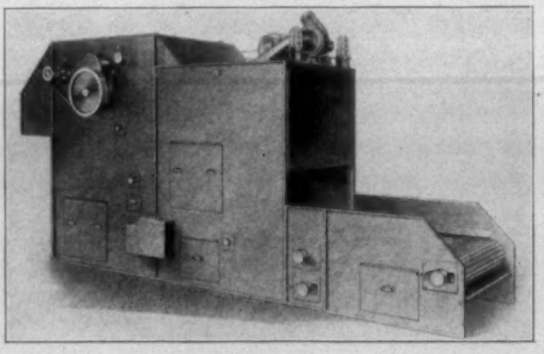

Fig. 2—Saco-Lowell F-7 Cleaning and Blending Feeder with Extended Apron. This apron is stopped and started by means of a sensitive rake, which also controls the signal lights.

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Those In Glass Houses

An old adage says, "People who live in glass houses should not throw stones."

Those who criticize the conduct of their neighbors have no right to complain when neighbors criticize them.

Certain professors at the University of North Carolina set out to reform the textile industry of North Carolina. They had decided in advance that it should be unionized and they determined to give support and assistance to all who sought to form unions within the industry.

In order to arouse a public sentiment which would aid them in their plans they hired (with the money of the taxpayers of North Carolina) men and women to investigate, or as they called it, survey, the industry and to find dark spots which could be the basis of criticism and attacks.

Frank Graham, then a professor but now president of the University, met at the King Cotton Hotel in Greensboro, N. C., a group of the enemies of the textile industry, including such men as Frank Tannebaum and advised with them.

Frank Tannebaum went to the University of North Carolina and secured there the material for his very false and misleading magazine story, "The South Buries its Anglo-Saxons."

Directly and indirectly the small group of University of North Carolina professors criticized and attacked the textile industry and told it how, in their opinion, it could be made a better industry.

When they made those attacks they were applauded by the Raleigh News & Observer and the Greensboro Daily News.

When, however, we have retaliated by attacking certain evils at the University both of the above mentioned papers foam at the mouth and say hard things about us.

The professors at the University may criticize the textile industry and try to force unionism upon it but no one connected with the textile industry may dare say a word against anybody connected with the University.

The professors did not attack all within the textile industry nor have we attacked all within the University. We have never said a word against the University of North Carolina as an institution, in fact, have often said that a majority of the professors were fine men who were doing the job for which they were paid, that is, were teaching the young men of North Carolina.

A small group of radical professors at the University started this fight by launching an attack upon the textile industry, a business with which they had no concern.

They forgot that they were living in a glass house and that from such a habitation they should not throw stones at their neighbors.

The people of North Carolina, even in the face of five-cent cotton and the business depression are willing to furnish the University of North Carolina ample funds with which to conduct the legitimate education of the young men who attend that institution and with that idea we are in entire accord.

We do not wish to see the legitimate education of such young men hampered, but certain men in University of North Carolina having taken it upon themselves to point out the faults in the textile industry we have a right to call attention to certain features of the operation of that institution.

A very cursory examination of the budget of the University of North Carolina shows that president's and administrative office cost $54,000 per year.

Although their work is supposed to be with young men at Chapel Hill, N. C., the telegraph and telephone bill of the University is in excess of $5,600 per year.

Although North Carolina is supporting a Department of Agriculture and a State College of Agriculture, there is upon the payroll of the University a man who gets $6,000 per year for doing research work in cotton and he has several assistants.

It is very fine of them to wish to help the cotton farmers but the trouble is that neither the farmers or the legislature sought their aid and their philanthropy is paid for out of the pockets of the tax payers of North Carolina.

They are paying a young lady a salary and her expenses for the purpose of seeking to correct the evils of the textile industry of North Carolina.

They are spending $110,000 per year upon what they call "extension work" which means that it has nothing to do with the education of the young men who go to Chapel Hill.

It costs $18,000 per year to keep up the grounds of the University exclusive of the upkeep of buildings which is more than many cities spend upon their parks.

When all the expenditures of the University of North Carolina are laid bare, as we think they will be, the taxpayers are going to have much to talk about.

As an illustration of the character of the teaching of some of the radical professors we reprint from the Tar Heel, a college publication, the following statement by a sophmore student:

> Some people can't seem to realize that the days of purity, self-sacrifice, ideals and all that bunk are gone forever. We are living in a modern world—a world of "get out of life what you can and let the devil take the hindermost." Then too that phrase "doubtful pleasures." There is no such thing as evil or wickedness—merely the standards of the times in which one happens to be living.
>
> We have one thing to be thankful for: fewer and fewer people who posses the innate ability to think are going to church. It's a fine thing to tell children about love and righteousness; but when a boy goes to college, it is time that he woke up to the fact that he is a man. He will soon see that if he ever expects to get anything out of life, if he ever expects to enjoy the real things of life and make a lot of money, why he has got to climb the ladder of true success by stepping on the faces of others.

It is a safe bet that the boy did not carry to Chapel Hill any such ideas and that they are not those of his parents. From whom did he get them?

Our statements are going to raise great ire upon the part of those who are responsible and those whose rabid loyalty to their alma mater, causes them to consider it a crime to suggest that every thing is not perfect at that institution.

A man might admit the presence of a cancer upon the body of his mother and seek its removal. He would be no less loyal to her than a son who would deny that there was a cancer and fight everyone who advocated an operation.

We did not start this fight nor did we ever offer any criticism of the University until certain professors at the University had made unjust and untrue statements relative to the textile industry and had demanded the right to investigate us.

They criticized us and therefore gave us the right to criticize them, especially so as the University is owned by the people, whereas, the textile industry is not owned by the University.

We wish to again state that we are not an enemy of the University of North Carolina.

We regard it as a great institution and favor giving it all the money needed for the legitimate education of the young men of the State.

A million for education, if necessary, but not one cent for the salary and expenses of an army of men and women who would run all over the State and poke their nose into the business of our citizens.

If Jones criticizes Smith why has not Smith a right to criticize Jones?

Substituting for Quality

The durene producers, through the Durene Association, has made notable progress in building up confidence in the quality standard set and maintained by its membership. It is only natural, that efforts should be made to pass off inferior quality goods as being equal to Durene standards. The standard of quality in any field is always a target for substitution.

The association, in calling attention to the fact that a considerable amount of distressed merchandize is being offered consumers on the basis that such goods are of durene cotton quality, points out that this is a recent development and has come about since Durene quality has been so well established.

We trust that those who sell and use durene yarns will be successful in combatting the above practice and feel that the progress already made by the Durene Association will go a long way in preventing the masquerading of inferior goods under durene standards.

The Buyer Advertises

It is usually the seller who advertises. He would trade his goods for the buyer's dollar. We notice recently an advertisement by a buyer who would trade his dollars for the goods of the seller.

In one of the New York papers, Montgomery Ward & Co. recently ran an advertisement in which they offered to buy goods. The advertisement set forth the fact that the company wanted, in the next ninety days, to buy for cash, millions of dollars worth of merchandise. If any manufacturers had as little as $10,000 worth of quality merchandise to sell at the right price or as much as $1,000,000 worth, Montgomery Ward & Co. stood ready to buy it.

When one of the largest buying agencies in the country finds it necessary to advertise to secure the kind of goods it wants, it appears to us that the supply of merchandise in the country is far less than is generally believed.

It seems to be a good time for the producers of the country to check up and find how much truth there is in the assertion that the country is burdened with excess merchandise.

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MILL NEWS ITEMS

GASTONIA, N. C.—The A. M. Smyre Manufacturing Company, of this city, has installed a new yarn-gassing machine. This machine was manufactured by the Cocker Machine & Foundry Co., also of this city.

ATLANTA, GA.—The U. S. Cotton Duck Mill, operated in the Federal prison, is having completed the second installation of new model large package spinning frames manufactured by the H. & B. American Machine Company.

MONTGOMERY, ALA.—The Bradford Cotton Mills have been organized here to take over the Montala Mills. Officers of the new company, which is capitalized at $100,000, are H. B. Dowell, of Prattville, vice-president and general manager, and A. L. Bush, Montgomery, secretary and treasurer.

ROSSVILLE, GA.—Plans are under way for the completion of an additional mill building for the Peerless Woolen Mills. The building will be three stories, 300x100 feet, of concrete foundations, structural steel and brick walls and will be of modern mill type.

CHERAW, S. C.—At the Cheraw Cotton Mills, the H. & B. American Machine Company has just completed the installation of new single process pickers, Arnold system, with variable speed calenders.

UNION SPRINGS, ALA.—The Cowikee Mills have just completed changing over the picking equipment to single process. The machines, which were manufactured by the H. & B. American Machine Co., are fitted with the variable speed calender drive.

CHATTANOOGA, TENN.—Roberts & Co., of Atlanta, consulting engineers, has been commissioned to draw plans for an addition of an extra floor to the three-story building of the Davenport Hosiery Mills, it is announced.

Preliminary plans for building the fourth floor, an undertaking to cost approximately $100,000, have already been drawn.

BEMIS, TENN.—Bemis Bros. Bag Company are now having erected by the H. & B. American Machine Company, a large installation of single process pickers, fitted with the Ramsdell automatic self-doffing calenders and also a complete equipment of new opening and cleaning machinery.

SAN ANTONIO, TEX.—The Planters & Merchants Cotton Mill of New Braunfels, Tex., was sold at public auction Friday to H. A. Wagenfuehr and others of New Braunfels for $130,000 and two lots of manufactured goods were bought by William Iselin & Co., New York, for $112,900.

Both sales were confirmed by the court the mill cost $1,500,000 when it was built ten years ago. It has been in the hands of a receiver for nearly two years, according to the purchasers.

Operations will be resumed and work will be given to about 300 persons in the mill. At a previous auction, $90,000 was offered for the mill. The court rejected the bid and a second auction was held.

MILL NEWS ITEMS

CHICKAMAUGA, GA.—All of the picking equipment at the Crystal Springs Bleachery is being changed over to the H. & B. American single process system.

CHARLOTTESVILLE, VA. — Albemarle Weaving Company, manufacturers of drapery and upholstery materials, has completed plans for a substantial increase in production, including the erection of a new building for storage and warehouse purposes and the installation of preparatory machinery to take care of an additional 50 looms.

The plant has been in operation continuously on a day and night basis for the past three years. Harry J. Hunter, who has been interested in the plant for five years, has been elected president. The company will manufacture exclusively for the converting trade. R. A. Bonnin continues in the capacity of superintendent.

ROCK HILL, S. C.—An experimental plant for the manufacture of burlap bags is being installed in the brick building on North Wilson street and College avenue by A. H. Bynum and W. B. Klugh.

The burlap from the Rock Hill Printing & Finishing Co. will be used in the manufacture of the bags, which will be sold as containers for cotton seed meal, hulls and other similar uses.

The project is said to be only an experiment at the present time, but if found profitable the business will be conducted on a larger scale. The brick building formerly used as a barn at the Cherry home on Oakland avenue is being converted into the bagging plant.

KERNERSVILLE, N. C.—The Southern Silk Mills, with plants here and at Greensboro, N. C., continue to maintain a full capacity operating schedule, with both day and night shifts. These plants have been on this schedule for approximately one year, having inaugurated it in August, 1930. According to reports, the plants are now enjoying good business.

New equipment was recently installed in both plants, which made it possible for the plants to produce any kind of rayon fabrics as well as other kinds of material manufactured from pure silk. Before this new equipment the plants manufactured sheer silks and rayons, such as chiffon and georgette crepe. The plants continue to make this type of goods as well as the new. Modern sizing equipment and new winding machinery were also installed.

DYERSBURG, TENN.—The Dyersburg Cotton Products Company, established here two years ago, has reached peak production. This company is a consolidation of five spinning, knitting and garment manufacturing plants.

The spinning plant of the mill, employing 700 operatives, is said to be running regularly with day and night shifts. The underwear plant is running part time at night in addition to the regular day shifts. The underwear and sweater departments, the output of which is sold up to October 15 delivery, are pushed to their limit to complete orders, it is said.

According to Dick Wheeler, general manager, contract has been obtained from a large packing house for 250,000 pounds of meat bags, requiring 10 weeks to fill it.

The Dyersburg Cotton Products Company is a consolidation of the Oswego Yarn Co., Oswego, N. Y.; Adrian

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MILL NEWS ITEMS

Knitting Products Co., Adrian, Mich.; Adrian Knitting Co., Adrian, Mich.; Sauquoit Knitting Co., Sauquoit, N. Y., and the Skenandoa Cotton Co., Utica, N. Y.

The change in name has had no adverse effect on the yarn business, according to James G. Merriman, who was connected with the Oswego Yarn Co.

Winston-Salem, N. C.—Chas. Chipman's Sons Company, Inc., hosiery selling agents, announced the withdralaw from its office of the Hanes Hosiery Mills, of this city, and the Wilkes Hosiery Mills, of North Wilkesboro, N. C.

In accordance with plans that have been under consideration for some time, both of these mills will merchandise their products through their own selling force, under the direction of A. T. Haefela, who for many years has been associated with Chas. Chipman's Sons Company, Inc., as secretary and sales manager, and whose withdrawal from that company will take place simultaneously with that of the two above mills on November 1.

Charlotte, N. C.—The Hudson Silk Hosiery Company has made plans for spending approximately $100,000 next spring in building an addition to its North Brevard street plant, so that the entire factory may be under one roof, F. Seifart, head of the company, announced.

The company now has two plants, one at 712 North Brevard street and another on South boulevard. In order to move its South boulevard equipment into the new plant, the company will add 28,000 square feet of floor space to its Brevard street building.

Mr. Seifart has just returned from New York, where he arranged his fall and winter business. The Hudson plant started a night shift on October 1, 1926, and since that time has operated on full time, stopping only on Saturday nights and Sundays, with the exception of last July when operations were suspended on Saturday afternoons. Beginning this week, the production will be measured to include operation of the factory from 12 noon Saturdays until midnight, and this schedule will continue throughout the year. Its present output is 21,000 dozen pairs of hose each month.

Cotton Ginnings Low

Cotton of the 1931 crop ginned prior to August 16 was announced Tuesday by the Census Bureau to have aggregated 90,414 running bales, including 673 round bales, counted as half bales, and no bales of American-Egyptian, but including linters.

To that date last year, 572,810 bales, including 12,211 round bales and none of American-Egyptian had been ginned.

Ginners report by States follows:

States—	Aug. 16, 1931
Alabama	9,629
Arizona	—
Arkansas	—
California	—
Florida	1,081
Georgia	10,878
Louisiana	—
Mississippi	—
Missouri	—
New Mexico	—
North Carolina	—
Oklahoma	—
South Carolina	—
Tennessee	—
Texas	73,402
Virginia	—
Other States	1,424
Total	90,414

Cotton Seen At Investment Level in Late Fall

By C. T. Revere, Munds & Winslow

This season we have a yield estimate at approximately fifteen and a half million bales. Very little of this cotton has moved to market, and hedge pressure has been practically nil. With December contracts around and below the seven cent level before even a minimum percentage of the crop has been sold, it is well to bear in mind the likelihood of what will happen when millions of bales are pressing for sale.

We are sanguine enough to believe that when cotton

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has completed its price readustments, it will be a splendid investment purchase for the patient holder. We do not, however, believe it wise to disregard the time element in this operation. Ordinarily, the movement should reach and maintain its maximum somewhere between the middle of November and the middle of December. This peak should be reached unless a holding program in the South should delay the marketing. Under such condition, a minimum price might not be registered until liquidation has been completed. In the deflation season of 1920-1921, the low price on the movement was not reached until the second week in the following March. From this point there was a moderate rally, and new low prices were registered the third week in June, 1921.

Assuming, however, that the marketing process is not artificially interrupted, the low prices should be registered late in Autumn or early in Winter. Whatever that price might be, granted normal marketing conditions, it should represent an investment basis for cotton.

The present weakness in the market, in our opinion, is due mainly to premature haste in making purchases. Too many operators throughout the trade, as well as among the speculative contingent, have been led to buy because prices looked relatively cheap. As a result, buying power at lower levels has been substantially curtailed. We think the stale long interest in the market, as a result of these operations, is fairly large.

There is not much pressure on the market at the moment, due to light hedge sales. Late crops are big crops, and this crop, which promises an abnormally large yield per acre, will be later than usual. In 1926, the ginnings up to August 16 amounted to 182,000 bales. The crop, however, was a late crop, and final ginnings were reported at 17,755,000 bales. Last year, we had a crop of 13,932,000 bales, standard weight. Ginnings up to August 16, were 572,000 bales. If the present crop follows the precedent of 1926, ginnings up to August 16 will be well under 200,000 bales, and should indicate a large yield per acre.

Mill Receives Insurance Check

Tarboro, N. C.—The Hart Cotton Mills are reported to have received a check from the Metropolitan Life Insurance Company for $50,221.72 on the life of the late B. Mabrey Hart, president of these mills. This is the amount of insurance this company carried on the life of the principal official of the company.

New Cleaning and Blending Feeder

(*Continued from Page* 17)

as to which machine should be fed is, therefore, eliminated by this automatic lighting system.

"As an alternative to this construction, the small hopper can be eliminated at the front of the feeder and an extended stop and start apron can be substituted. However, this stop and start apron is controlled by the same rake as used in Figure No. 1. In using equipment as illustrated in Figure No. 2, the bottom apron is dropped slightly so that the extended apron feeds the cotton directly onto the bottom apron. The equipment as illustrated in Figure No. 2 carries the same signal system and operates in a manner identical to Figure No. 1, except that the operator can deposit a larger quantity of cotton onto the extended apron and is, therefore, able to tend more machines should this be necessary.

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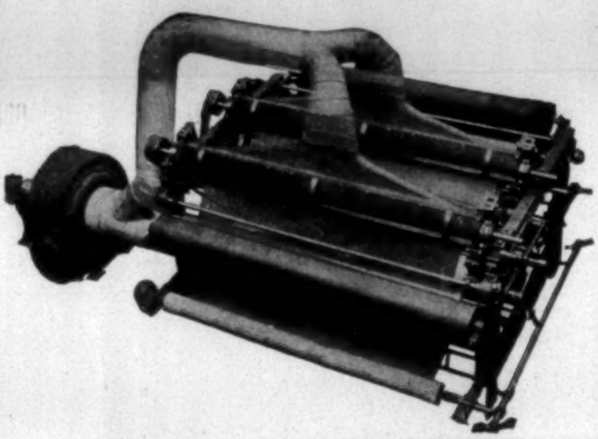

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Practical Textile Designing

(*Continued from Page* 10)

number of threads are required for a full repeat of the 70 degree twill, but if the number of threads in the regular twill cannot be divided by 3 the full number of threads will be required as for the 45 degree twill.

Fig. 119 illustrates the regular $\frac{5\ 2}{2\ 3}$ twill weave.

Fig. 120 illustrates the same weave having every third thread in different type.

Fig. 121 illustrates the 70 degree twill derived by using the solid type. Pattern complete on 4 threads and 12 picks.

Fig. 122 illustrates the regular $\frac{6\ 2}{5\ 4}$ twill weave.

Fig. 123 illustrates the 70 degree twill derived from this weave. The weave not being divisable by 3, the full number of threads are required as for the 45 degree twill.

75 DEGREE GRADING

These twills are constructed by using every fourth thread of a regular 45 degree twill. When the threads in the regular twill are devisible by 4, only one-fourth the number of threads are required in the 75 degree twill. When the regular twill repeats on an even number of threads but is not divisible by 4, the 75 degree twill will be complete on one-half the number of threads. When the regular twill repeats on an uneven number of threads, the full number of threads will be required as for the 45 degree twill. The following examples will illlustrate the different constructions:

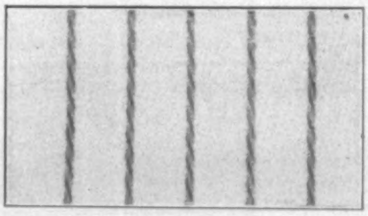


Fig. 131

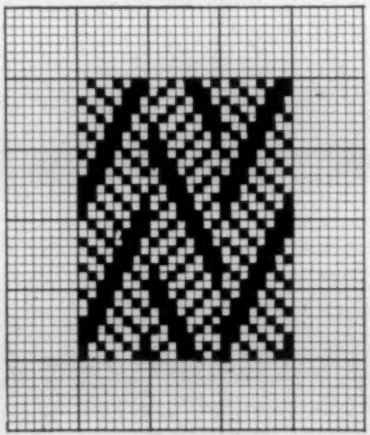


Fig 132

Fig. 124 illustrates the regular $\frac{8\ 2}{5\ 5}$ twill weave.

Fig. 125 illustrates the same weave having every fourth thread in different type.

Fig. 126 illustrates the 75 degree twill derived by using the solid type. Pattern complete on 5 threads and 20 picks.

Fig. 127 illustrates the regular $\frac{6\ 1\ 1}{5\ 1\ 4}$ twill weave.

Fig. 128 illustrates the 75 degree twill constructed from this weave.

The weave being on an even number of threads but not divisable by 4, only one-half the number of threads are required for the repeat.

Fig. 129 illustrates the regular $\frac{6\ 1}{4\ 4}$ twill weave.

Fig. 130 illustrates the 75 degree twill derived from this weave. The weave being on an uneven number of threads, the full number is required for the repeat of steep twill.

Fig. 131 illustrates a dress goods fabric in which a 63 degree twill has been used. This sample contains 56 threads of white and eight threads of white and eight threads of blue in one repeat of the pattern. The blue threads are woven in opposite direction to the white threads. The design for the fabric is given at Fig. 132.

The Dyeing of Viscose

(*Continued from Page* 8)

lose in dyeing cotton goods with either basic or direct dyes, it is remarkable that we do not encounter more trouble with the basic and direct dyes than we do. It is well recognized that the ageing operation of the soda-cellulose crumbs, in the viscose method, is largely an oxidizing process.

NEW DYES AND DYEING APPARATUS

Many patents have been issued recently covering special dyes for viscose but British Patent No. 306,908, to the I. G. Farbenindustrie A.-G. is somewhat different from the others in that it states that as a class the dyestuffs containing metal, such as copper, nickel or cobalt, in complex combination tend to give even shades on viscose or irregular physical or chemical properties. Dyes of this type have not previously had a very wide usage on rayon.

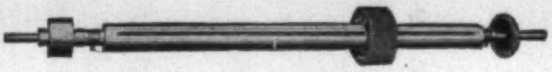
The foam process of degumming and dyeing true silk has been in use for many years but C. M. Whittaker and Courtaulds, in British Patent No.3 12,471, have recently covered an apparatus for the foam dyeing of rayon hanks of low denier by the foam method. The hanks are carried on a rotatable hank holder of non-corrodible metal rods supported at the ends by plates, so arranged that the hanging sides of the hanks alternately recede and approach one another as the holder rotates. In order to allow free access of the foam, the end hanks should be at least three inches from the sides of the dye tub.

Close Charlotte Office

C. L. Upchurch & Sons, dealers in textile machinery, have closed their Charlotte offices and all business will hereafter be handled through their office at Athens, Ga.

Rayon Imports in July Total 150,921 Pounds

Washington.—July rayon imports included 150,921 pounds of yarns, valued at $124,144; 540 pounds of spun yarn and thread, valued at $662; 220,837 pounds of waste, valued at $23,842; and 124,165 pounds of cut or staple fiber, valued at $62,631, according to figures just released by Department of Commerce. There were no imports of filaments during the month.



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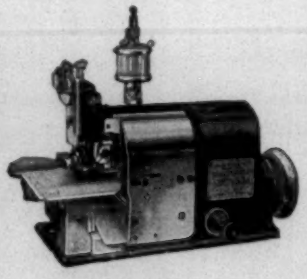

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Hampton Mill Banquet

Clover, S. C.—Honoring the office force, superintendent, overseers, and second hands of the plant, the Hampton Spinning Mill of this place gave a banquet one evening recently. The party of 35 or more was greeted by L. L. Hardin, who is the new manager of the mill. Short talks were made by John W. Long, J. W. Quinn, Edward Smith, J. E. Kennedy and Justin Smith.

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Everybody's Business

(*Continued from Page 5*)

a year ago. The business index is down to 71 per cent, the lowest point in modern history. The next lowest record was in the depression of 1921 when business touched bottom at 27 per cent below normal. The facts indicate that the current contraction in trade and industry has already gone beyond its allotted time.

Wage and dividend reductions indicate that hundreds of companies are readjusting their financial positions to meet current conditions. There have been 260 wage reductions in our country spread over 26 industries. Even state and municipal governments have done some cutting. Items of expense everywhere are being brought into line. Even the charge for crossing the ocean has been reduced 20 per cent.

Nations are getting an international viewpoint. They are recognizing the danger of setting up fences about their own yards. Important reciprocity agreements are near at hand. The conversations between the leaders of governments have represented a substantial advance along the road that leads to peace, confidence and good business. Often it takes some widespread danger from which no one is free to heal age-old feuds and develop an international spirit of co-operation.

Readjustment may not be complete, but it has gone a long way. It has included a change in our viewpoints and beliefs, as well as in prices and practices. People everywhere are headed once again up the road to sanity. The attacks on the chain stores are bringing a public reaction which is unfavorable to the politicians. There is an increasing insistence upon a fair ring and fair rules. The majority of voters are consumers, and the pocketbook of the family provider is the one thing getting closest attention today.

Mushroom improvements are receiving less support. Unsound remedies are failing of adoption. Inefficient industries are in for a severe "raking" on many points of practice. This will be hard on incompetent managements, but it will tighten up methods and produce economies. In the case of the railroads it will lessen the pressure for favors brought upon them by large shippers.

Sound programs of proration based on self-help and voluntary co-operation are rapidly winning favor. The railroads are developing much desired solidarity or remedial measures, aside from finding many things they may do to help themselves. They will doubtless abandon thousands of miles of unprofitable tracks and a good portion of the 26,000 railroad stations that lose money. These and dozens of other corrective measures will change the entire railroad picture.

The coal industry wants to become a utility, and there are many reasons why its wish should be gratified. The big oil companies desire a certain amount of Federal co-operation in their efforts to restrict the waste of our most precious fuel, and they will likely be accorded such help. Widespread unemployment insurance under the control of American industry will build up funds to care for idle men, just as funds are now created to take care of depreciation, obsolescence, bond redemption and dividends.

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COTTON GOODS

New York.—Cotton goods markets were quiet and unsettled during the week. The further decline in cotton kept business at a low point. Buyers were not willing to operate ahead and mills making finished goods further delayed the naming of new fall prices on printed colored and bleached goods. Trade sentiment here is that little new large scale business will develop for another week or so and that many buyers will stay out of the market until Labor Day. It is felt that active trading will develop when cotton prices are more stable but that little trading is likely until the market feels that cotton has reached the bottom.

Prices on gray goods were firmer at the week end on the strength of the better tone in the cotton market. Sales of print cloths and sheetings, in several houses, were reported above those of the previous week. There was additional evidence that many buyers are in need of goods and are ready to cover when the market is more settled.

The demand for carded broadcloths was light and sales were small. There was little business in twills, drills and sateens. A few sales for spot and prompt delivery were noted, but no important contracts.

In fine goods, the demand for all cotton constructions was light. Some mills were quoting slightly lower prices on combed broadcloths. Lawns were slow. All cotton mesh goods were in somewhat better demand and there was pressure to speed up deliveries on past contracts.

Progress was reported in selling specialty goods for mechanical purposes, but buyers are still out of the market on contracts that were in hand before the Government report was issued.

Cotton goods prices were as follows:

Print cloths, 28-in., 64x60s	3
Print cloths, 27-in., 64x60s	2⅞
Gray goods, 38½-in., 64x60s	4⅛a 4¼
Gray goods, 39-in., 68x72s	4¾a 4⅞
Gray goods, 39-in., 60x80s	5½a 5⅝
Brown sheetings, 3-yard	5½
Brown sheetings, standard	6½
Brown sheetings, 4-yd., 56-60s	5½
Tickings, 8-ounce	14
Denims	11
Dress ginghams	12½a13¾
Standard prints	7
Staple ginghams	7

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for
Southern Cotton Mills
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YARN MARKET

Philadelphia, Pa.—There was little change in the yarn market last week although prices were firmer as the cotton market improved on Friday and Saturday. Most sales were of small quantities for prompt shipment and neither consumers nor spinners showed interest in future contracts. Inquiry was large enough to reflect that many consumers need additional yarn supplies and will be willing to cover when they are more confident of the cotton situation. A number of bids for large lots to be delivered through the end of the year were refused as buyers were from a cent to a cent and a half lower in their prices than spinners were. Dealers reported that they could move good quantities of 20s-2 warps at 16 cents, but no sales were reported at this figure. Spinners insist that they can barely break even at present figures and that any further reductions would show a loss.

Reports were to the effect that a few mills that had banked too heavily on the insulating business than came their way have not found enough specifications made to keep running and have therefore closed down. Balancing this it was found that insulators are now seriously thinking of covering on 1932 potential needs. Insulators, as a rule, are obligated to take much larger amounts of yarns than they have business to utilize at this time.

Knitters occasioned some commendatory reports because those with contracts placed have consistently called upon spinners with schedule specifications for deliveries. At times like the present even specifications are classed as orders. In various primary directions the handling of specifications was found to take up considerable time and to justify the running of many additional spindles or relievin govertaxed warehouses on some count yarns.

Most local yarn merchants report stocks very low—reduced in instances from 100 and more cases in July to almost zero—and it happens not infrequently that a count which a manufacturer has been using is not to be had from the usual source of supply.

Another is that practically every purchase of yarn is for immediate consumption, revealing low stocks in consuming mills.

Southern Single Warps

10s	17
12s	17½
16s	18
20s	18½
26s	22
30s	38½

Southern Two-ply Chain Warps

8s	17
10s	17
12s	17½
16s	18½
20s	18½
24s	21
30s	23½
36s	29
40s	31
40s ex.	33

Southern Single Skeins

8s	17
10s	17
12s	17½
14s	17½
16s	18
20s	18½
24s	21½
26s	22
28s	22½
30s	23½

Southern Two-ply Skeins

8s	17
10s	17
12s	17½
14s	18
16s	18½
20s	19
24s	21
26s	22½
30s	23
40s	31
40s ex.	33
50s	40
60s	46

Duck Yarns 3, 4 and 4-ply

8s	17
10s	17½
12s	18
16s	19
20s	20½

Carpet Yarns

Tinged Carpet, 8s, 3 and 4 ply	15
White Carpet, 8s, 3 and 4 ply	16
Colored Strips, 8s, 3 and 6 ply	17

Part Waste Insulating Yarn

8s, 1-ply	14½
8s, 2, 3 and 4 ply	15
10s, 1-ply and 3-ply	15½
12s, 2-ply	16½
16s, 2-ply	17½
22s, 2-ply	18½
26s, 2-ply	21
30s, 2-ply	22

Southern Frame Cones

8s	16
10s	16
12s	16½
14s	17
16s	17½
18s	18
20s	18½
22s	19½
24s	20½
26s	21½
28s	22½
30s	23

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SOLVAY SALES CORP., 61 Broadway, New York City. Sou. Reps.: Chas. H. Stone, 822 W. Morehead St., Charlotte, N. C.; Burkhart-Schier Chemical Co., 1202 Chestnut St., Chattanooga, Tenn.; Woodward Wight Co., 451 Howard Ave., New Orleans, La.; J. A. Sudduth & Co., Birmingham, Ala.; Miller-Lenfestey Supply Co., Tampa, Miami and Jacksonville, Fla.

SONOCO PRODUCTS CO., Hartsville, S. C.

SOUTHERN SPINDLE & FLYER CO., Charlotte, N. C., Wm. H. Monty, Mgr.

STANLEY WORKS, THE, New Britain, Conn. Sou. Office and Warehouse: 552 Murphy Ave., S.W., Atlanta, Ga., H. C. Jones, Mgr.; Sou. Reps.: Horace E. Black, P. O. Box 424, Charlotte, N. C.

STEEL HEDDLE MFG. CO., 2100 W. Allegheny Ave., Philadelphia, Pa. Sou. Office and Plant: 621 E. McBee Ave., Greenville, S. C. H. E. Littlejohn, Mgr. Sou. Reps.: W. O. Jones and C. W. Cain, Greenville Office.

STEIN, HALL & CO., INC., 285 Madison Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C. Ira L. Griffin, Mgr.

TERRELL MACHINE CO., Charlotte, N. C., E. A. Terrell, Pres. and Mgr.

TEXTILE DEVELOPMENT CO., THE, 1001 Jefferson Standard Bldg., Greensboro, N. C. Sidney S. Paine, Pres. Ga.-Ala. Rep., Robert A. Morgan, Rome, Ga.

TEXTILE-FINISHING MACHINERY CO., THE, Providence, R. I. Sou. Office, 909 Johnston Bldg., Charlotte, N. C., H. G. Mayer, Mgr.

UNIVERSAL WINDING CO., 95 South St., Boston, Mass. Sou. Offices: Johnston Bldg., Charlotte, N. C.; Candler Bldg., Atlanta, Ga. Sou. Reps.: Frederick Jackson and I. E. Wynne, Charlotte Office; J. W. Stribling, Atlanta Office.

U. S. BOBBIN & SHUTTLE CO., Manchester, N. H. Sou. Plants: Monticello, Ga. (Jordan Division); Greenville, S. C.; Johnson City, Tenn. Sou. Reps.: L. K. Jordan, Sales Mgr., First National Bank Bldg., Charlotte, N. C.; D. C. Ragan, P. O. Box 536, High Point, N. C.; E. R. Umbach, P. O. Box 108, Atlanta, Ga.; M. Ousley, P. O. Box 816, Greenville, S. C.; J. H. Kelly, Jordan Div., Monticello, Ga.

U. S. RING TRAVELER CO., 159 Aborn St., Providence, R. I. Sou. Reps.: Wm. P. Vaughan, Box 792, Greenville, S. C.; O. B. Land, Box 4, Marietta, Ga. Stocks at: Textile Mill Supply Co., Charlotte, N. C.; Charlotte Cupply Co., Charlotte, N. C.; Gastonia Mill Supply Co., Gastonia, N. C.; Carolina Mill Supply Co., Greenville, S. C.; Sullivan Hdw. Co., Anderson, S. C.; Fulton Mill Supply Co., Atlanta, Ga.; Young & Vann Supply Co., Birmingham, Ala.

VEEDER-ROOT, INC., Hartford, Conn. Sou. Reps.: W. A. Kennedy Co., Johnston Bldg., Charlotte, N. C.; Carolina Specialty Co., 122 Brevard Court, Charlotte, N. C.

VICTOR RING TRAVELER CO., Providence, R. I. Sou. Offices and Warehouses: 615 Third National Bank Bldg., Gastonia, N. C., A. B. Carter, Mgr.; 520 Angier Ave., N.E., Atlanta, Ga., B. F. Barnes, Mgr. Sou. Reps.: B. F. Barnes, Jr., Atlanta Office; A. D. Carter and N. H. Thomas, Gastonia Office.

VISCOSE CO., Johnston Bldg., Charlotte, N. C., H. Wick Rose, Mgr.

VOGEL CO., JOSEPH A., Wilmington, Del. Sou. Office: St. Louis, Mo.

WHITIN MACHINE WORKS, Whitinsville, Mass. Sou. Offices: Whitin Bldg., Charlotte, N. C., W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps.: M. P. Thomas, Charlotte Office; I. D. Wingo and C. M. Powell, Atlanta Office.

WHITINSVILLE SPINNING RING CO., Whitinsville, Mass. Sou. Rep.: Webb Durham, 2029 East 5th St., Charlotte, N. C.

WICKWIRE-SPENCER STEEL CO., 41 E. 42nd St., New York City. Sou. Rep.: James A. Greer, 50 Rutherford St., Greenville, S. C.

Rayon Market Active

Producing companies report that it has been keeping up remarkably. The past few weeks have seen orders placed in fair volume. One of the chief reasons assigned for this activity is said to be the strong demand for rayon yarns from manufacturers of rayon linings. The popularity of these linings for use in men's suits has proved the salvation of the business. While one looks for the summer season to produce a notable lull in demand, inquiry in the market shows that the buying of rayon yarns has been more than satisfactory.

The indications are that visecose yarn producers will, within the next few weeks, be running at full capacity, or on a full-time basis. In spite of this the belief in the market is that on certain numbers there will be found to be a scarcity in the fall. Yarn buyers have been reporting that they have had trouble recently in getting certain counts for the deliveries wanted, although it is true that some of these requested deliveries were spot or nearby.

Interest just now is centered on multifilament yarns. There is reported to be a shortage of inferior grades of yarn with signs prevalent that the 65-cent knitting yarns in point of quantity are running low. It is thought in some quarters that by the end of this month they will be difficult to obtain. Velvet weavers are saying that producers are slow in their deliveries of high luster 100 denier. Eighty denior yarn is in fairly steady demand from silk houses running on acetate crepe yarns. There is a better demand developing for 40 denier cupramonium yarn from warp knitters and a steady demand for special high twist yarns by the full-fashioned hosiery field.

State College Textile School Graduates

The textile industry has offered better opportunities to young college men during the years since the World War than it ever did before the war, according to a vocational study of the Textile graduates of North Carolina State College just completed.

The total number of men who have received textile degrees from State College is 357 and of this number more than 70 per cent are in the textile industry. Many of these men hold good positions.

Five of the textile alumni are presidents and four are managers of textile corporations, while five are general superintendents and thirty are superintendents. There are eleven men holding the position of secretary-treasurer and seventeen are assistant superintendents of textile corporations.. Thirty-four are foremen in cotton mills or dye plants, eleven are textile chemists, and four are textile designers. Six men are Southern representatives for manufacturers of rayon, textile equipment and supplies, while seventeen men hold positions as sales manager, sales engineer or salesmen for similar firms. Six men are technicians for rayon companies, five are technical demonstrators for dyestuff manufacturers, and five are doing research or specialization work for the United States Government. Many other alumni hold responsible positions in commission houses and other phases of the textile industry. Three of the leading textile schools in the South have State College textile alumni on their faculty.

The salaries paid the men holding the above positions are large and the average annual income received by the textile graduates of North Carolina State College who have stayed in the industry is considerably above the average earnings of college graduates throughout the country.

Recent Textile Patents

Recent textile patents secured through Paul B. Eaton, Charlotte attorney, include:

Wm. H. Bahan, Greenville, S. C., Patent No. 1,814,780 for Beam Supporting Means for Textile Machinery, which comprises bearing members adapted to be secured to opposite sides of a loom for supporting the warp beam with a pivoted slidable member adapted to be secured on top of the spindles of the warp beam after the warp beam has been placed in position.

Wm. Dalton Robinson, Cherryville, N. C., Patent No. 1,817,267 for Coating for Cotton Mill Rolls, which coating comprises leather material comprising a mixture of two and a half ounces of dry red lead, two and one-half ounces of oil or origanum, two ounces of lamp black, two and one-half ounces of glycerine, one and one-half pounds of gelatine and sufficient acetic acid to make one gallon.

Ralph Webber, Clover, S. C., Patent No. 1,814,353 for a Slub Catcher.

Hopson P. Lovett, Columbia, S. C., Patent No. 1,815,789 for a Loom Cam Shaft Bearing Lifter and Supporter.

Matthew C. Kirkpatrick, Rock Hill, S. C., Patent No. 1,815,847 for Harness Retractor for Looms.

Mill Village Activities

Edited by Mrs. Ethel Thomas—"Aunt Becky."

Mrs. Thomas Married

Mrs. Ethel Thomas, known throughout the Textile South as "Aunt Becky Ann," was married on last Sunday morning at York, S. C., to William Hampton Dabbs, of Wadesboro, N. C.

Mr. Dabbs is a retired merchant and lumberman of Wadesboro.

Mr. and Mrs. Dabbs will make their home on Aunt Becky's country place near Charlotte, and she will continue her duties as a member of the staff of the Southern Textile Bulletin.

Goldville, S. C.

JOANNA NEWS

WEALTH

We sometimes envy those whom we think are wealthy. Wealth doesn't always mean money. Some of the wealthiest mortals on earth are those who just naturally bring cheer into other folks' lives.

VILLAGE NEWS

Mr. and Mrs. Robert Shirley and daughter, Miss Mildred Shirley, of Oswego, N. Y., are spending the week with Mr. and Mrs. John DuBois.

Mrs. Mamie White and Tom Addison are visiting relatives in Tampa and Bowling Green, Fla.

Mr. and Mrs. Mayfield of Greer, S. C., were Sunday guests of Mr. and Mrs. J. L. Delany.

Friends of Otis Murphy will be glad to know that he is improving after a short illness.

Miss Mary Chapman is visiting her aunt in Greenfield, Ohio.

Kenneth Buchanan of Laurens spent a few days last week with his grandparents, Mr. and Mrs. W. J. Clark.

Mr. and Mrs. Homer Woodruff of Sanford, Fla., spent Monday with Mr. and Mrs. J. J. Clark.

Miss Mary Montgomery of Blackstock, S. C., is visiting Misses Elizabeth and Jeannette Dickey.

Miss Emma Dickert of Newberry is visiting Mrs. I. E. Stroud.

Mr. Andrew Austin of Bray, Nebraska, spent Monday with Mr. and Mrs. I. E. Stroud.

Misses Louise and Robbie Bannister of Pelzer, S. C., spent the past week with Mrs. Mack Blakely.

Miss Dorothy Reed of Lyman, S. C., spent the week with Miss Doris Abrams.

Born to Mr. and Mrs. J. P. Oakley, a daughter, on Friday, August 14th.

Born to Mr. and Mrs. J. P. Craggs, a son, on Friday, August 14th.

Born to Mr. and Mrs. Carley Wells, a daughter, on Monday, August 17th.

Mrs. G. N. Foy is a patient in the Greenwood Hospital, following a tonsil operation.

Mr. Alton Gresham is improving after an operation for appendicitis. He is a patient in the Newberry County Hospital.

A tonsil clinic was held at Dr. Martin's office last Thursday, at which time ten persons had their tonsils removed. Dr. Crosby of Greenwood, S. C., performed the operations. All patients are doing nicely.

NOTICE

All children who missed getting the smallpox vaccine last week, will please come to Dr. Martin's office tomorrow afternoon, Thursday, at 5 o'clock. This is the last chance to get the vaccine.

Those who failed to get book lists when they were delivered yesterday may get them by sending to the school house for them tomorrow (Thursday) morning at 9 o'clock.

The school office will be open from 9 to 11 o'clock on Thursday and Friday mornings of this week for the purpose of receiving and selling second hand books. Those who wish to sell second hand books, bring them at these times and those who wish to buy second hand books, may come and buy them.

New books will not be for sale until Thursday and Friday of next week.

Lumberton, N. C.

MANSFIELD MILLS—JENNINGS PLANT, Nos. 1 and 2

An addition has been built to this mill since I saw it last, and in that new addition is where we found genial W. H. Gibson, general superintendent of the Mansfield Mills, in which includes all the mills in Lumberton except the National.

H. L. Holden is superintendent at Jennings Mills Nos. 1 and 2. W. R. Parnell, overseer carding and spinning; J. A. Melvin, overseer weaving; S. F. Covington, overseer cloth room; Clayton Singleterry, master mechanic; K. F. Haman, yard man.

There's a large and beautiful lawn at these mills, and everything is nice and clean. The people are all friendly and sociable and not afraid to smile.

LUMBERTON PLANT—Nos. 1 and 2

Wm. Miller, superintendent—and as fine as they make them; W. G. Willoughby, carder (weight 116), also has a tobacco farm. Some hustler; Lee Stallings, spinner; L. W. West, weaver (says his family just will have the Bulletin); J. C. Burgess, slasher foreman.

DRESDEN PLANT

Henry Davis, carder; J. B. Miller, spinner; E. V. Steading, overseer cloth room; G. F. Fields, master mechanic; W. P. Teal, supply clerk. He is an old friend of long ago. We worked together in old Union Cotton Mill, Union, S. C. W. J. Coleman, overseer dyeing; J. C. Burgess, lasher foreman.

NATIONAL COTTON MILLS, INC.

This is truly an interesting place. Over 500 different colors yarn are made here.

J. T. Penny, bachelor superintendent, is a live wire, but doesn't neglect duty for "skirts." E. L. McWhite, overseer carding; D. R. Bullock, spinner; H. I. Penny, night carder; J. F. Brisson, engineer; A. C. Penny, dyer; L. P. Bodenheimer, assistant superintendent.

This mill has a fine ball team, a beach and playgrounds for operatives, and an excellent band of 14 pieces.

W. O. Thompson is manager of the ball team, and D. R. Bullock, manager of the band.

Coton Bags Have Varied Uses

EVERYONE SHOULD INSIST ON PURCHASES BEING PUT UP IN COTTON BAGS

Because of their many uses, every one should insist on their purchases being put up in cotton bags. Here in the South where we grow cotton and manufacture cotton we should be especially vigilant that no jute or paper bags be wished off on us except where absolutely necessary. Never should flour, sugar, salt, starch, and many other commodities be put in anything except a cotton bag. However, the only way to get these cotton bags is for the ultimate consumer to demand them.

The following touches on the many uses of flour bags:

SEWING WITH FLOUR BAGS PREPARED BY THE HOUSEHOLD SCIENCE INSTITUTE

Not all empty flour bags end their lives as humble dish towels. Many of them find their way to the sewing room to hobnob democratically with silks and satins and laces. From there they emerge in a variety of forms so practical in use and attractive in appearance that their lowly origins would never be suspected.

The 98-pound flour bag will be found the most satisfactory for making garments and household articles. Use the bags in which you get flour for home use, or bags may be had for a few cents apiece from almost any baker. The smaller sacks in which foodstuffs are purchased are also of fine material and can be used for making the smaller articles described in this article.

TO RIP BAG

All flour bags are sewn with chain stitching. This stitching usually starts in the lower corner near the fold. By cutting the chain close to the bag and taking hold of the ends of the upper and lower threads at this point and pulling both, the stitching is ripped in a few seconds. If any difficulty is experienced, the bag has perhaps been stitched from the other end.

TO REMOVE STAMPING

The ease with which stamping may be removed from flour bags depends on the kind of ink that has been used. Under ordinary circumstances it is sufficient to cover the inked places with lard or soak them in kerosene overnight. Then wash out in lukewarm water.

If only a faint, barely discernible marking may still be seen, it is safe to assume a few washings will remove the remaining traces.

AN IDEAL MATERIAL

You now have ready for use a strong, sturdy piece of material, ranging in size from about 18 inches square to 36x42 inches, with two parallel selvage edges. It is firm, closely woven, and pre-shrunk. Muslin of equal plality, bought in a store, would cost considerably more. It will stand repeated tubbings and boiling and, since it cannot fade, is exceptionally satisfactory for aprons and children's frocks, two articles of apparel which make frequent trips to the washtub.

HOW TO MAKE THESE ARTICLES

The color of the larger flour bag material is a light cream, but smaller sizes are usually white. The cream material will contrast very well with such materials as ginghams, linens, and chambray in solid colors, checks or figured patterns. In making aprons, children's dresses and pajamas, the collars, cuffs and belts are usually of the contrasting material. So little is required that one can buy short remnant lengths very cheaply or use up pieces left over from making house dresses and the like. Curtains, luncheon sets and bedspreads made from flour bags often have borders of checked gingham.

Bias tape binding is the simplest way of finishing off the edges of many of the articles shown here. It can be had in a variety of weights, widths, materials, solid colors and checks or stripes.

SIMPLICITY THE KEYNOTE TO TRIMMING

Elaborate trimming would be out of place on these things. A little simple, and quickly worked embroidery is just as effective and far more in keeping. Outline stitch, lazy daisy and cross-stitch are among the best. Buttonholing is an alternative to binding the edges with the bias tape.

DYEING

The woman who is handy with dyes will find this material takes the dye admirably. The colors are deep, solid and lasting. Some very elever tie-dyeing has also been done. In dyeing cotton, however, it should be borne in mind that the dyes must be stronger and be applied longer than with thin silks.

FIT FOR A PRESIDENT!

Flour bags have even invaded the White House. Not in the form of humble dusters or dish towels, but as a gift to the President himself in the form of a smartly tailored pair of pajamas. The ladies of the Millard Avenue, Chicago, Presbyterian Church, were anxious to do something to show their approval and appreciation of President Coolidge's program of thrift and economy. Some one suggested making the pajamas as a gift both practical and sure to meet with Presidential approval.

A warm letter of appreciation from the White House was sent to the ladies, voicing Mr. Collidge's acceptance and appreciation of the unique gift.

The excellent wearing quality of the flour bag material fully justifies the work of making pajamas and other garments out of them. Simple and rather tailored styles work out most effectively.—Avondale Sun.

Cotton Uniforms at Kendall Mills

The operatives of the Thrift Plant of the Kendall Mills at Paw Creek, N. C., are among the growing number of cotton mill employees now wearing cotton uniforms exclusively at their work in helping personally to effect an increased consumption of dress goods produced within the industry.

The male employees in the weaving and carding departments, as well as the overseers, wear white trousers, or overalls, with white shirts. Practically all of the women in the spinning room wear white short sleeved dresses of the smock type, although a number of those running speeders and warpers have adopted overalls for the sake of both safety and modesty.

In discussing the matter, H. K. Hallett, general manager, stated that a recent canvass among the women employees revealed a number of reasons for preference for uniforms. One young woman is quoted as liking the idea of a uniform because without the need of taking time to consider and select a dress to wear every day, she enjoys an extra 30 minutes sleep every morning. Among other advantages of the uniform reported are the factors of comfort, cleanliness and economy. In addition uniforms contribute to the morale of the employees in several ways—perhaps the most notable, in eliminating, as in a number of schools and colleges, any feeling of rivalry in dress.

According to Mr. Hallett the uniforms selected are white as a matter of personal cleanliness and to instill a spirit of cleanliness in the home as well as in the mill, the product of which is distributed principally through the hospital and drug trades.

CLASSIFIED ADS.

COTTON mill superintendent or manager—open for employment after August 1. Glad to have opportunity for furnishing references or other desired information upon request of interested parties. Address S. C. N., care Southern Textile Bulletin.

WANTED—Position as master mechanic. Years of practical experience. Industrious, sober. Good references. Address M. M., care Bulletin.

WANTED

Patented Textile Specialties and Machinery to manufacture on a royalty basis. Send sample or drawing of your proposition to Richmond Machine Company, 3371-79 Richmond street, Philadelphia, Pa.

RODNEY HUNT

Textile Wet Finishing Machinery
Water Power Equipment
Rolls—Wood, Metal, Rubber

RODNEY HUNT MACHINE COMPANY
53 MILL STREET ORANGE, MASS.

THE RIGHT WAY TO TRAVEL is by train. The safest. Most comfortable. Most reliable. Costs less. Inquire of Ticket Agents regarding greatly reduced fares for short trips.
SOUTHERN RAILWAY SYSTEM

Classified Rates

Effective April 23, 1931

Set Regular "Want Ad" Style, without border or display lines—4c per word, each insertion.

Minimum charge, $1.00. Terms—Cash with order.

Set Display Style, with headings in larger type and border—$3.00 per inch, one insertion.

PRINTING?

RULED FORMS

GET OUR QUOTATIONS

LETTERHEADS
on any quality of paper and envelopes to match
Bill Heads Factory Forms
Statements Invoices
Pay Roll Envelopes
Loose Leaf Systems and Binders

Ledgers, Journals, Cashbooks and Day Books
Many Mill Forms Carried in Stock

WASHBURN PRINTING CO.
DAVID CLARK, President
18 West Fourth St. Phone 3-2972 Charlotte, N. C.

Knitting Machinery Exports During June

A total of 156 circular hosiery knitting machines, with a value of $57,334, was exported from the United States during June, the Department of Commerce announces.

The countries receiving largest shipments were the United Kingdom, 82 machines; Canada, 21; Japan, 14; British India, 10, and Spain, 8.

Other circular knitting machines to the number of 120, with a value of $59,241, were exported during the month; 109 machines went to the United Kingdom.

Exports of other knitting machines and parts in June were valued at $49,851, Canada and the United Kingdom taking the bulk of these exports, as usual.

No full fashioned machines were exported during June.

New Schedules—
Afternoon Service

Between
Charlotte-Spartanburg-Greenville

Convenient—Quick—
Reliable

Lv. Charlotte .... 4:15 P. M.
Gastonia .... 4:44 P. M.
Kings Mountain .... 5:00 P. M.
Spartanburg .... 6:20 P. M.
Ar. Greenville .... 7:10 P. M.

Leave after business hours, arrive Greenville for supper.

Greatly Reduced Round Trip Fares

Two days one and 1-3 fare, 6 days one and 1-2 fare for the round trip.

WEEK-END fares one and 1-5 fare for round trip on sale Friday, Saturday and Sunday. Return limit following Tuesday.

COACH EXCURSION fares one and 1-10 fare for round trip. On sale Friday, Saturday and Sunday. Return limit 10 days.

SUNDAY fares 1 cent per mile for round trip—150 or less miles. Return same day. Good in coaches only.

Ask Agents
Southern Railway System

Here are the Crucial Minutes

. . *which the business paper helps to save*

"Mr. Smith," calls the secretary. The first of a line of waiting salesmen, hurriedly collecting hat and sample case, enters the buyer's office. A ground-glass door closes behind him. The other men shift, recross their legs and settle down to wait their turn. It won't be long now.

And it won't! For the average time given to salesmen is brief—heart-breakingly brief, sometimes. In retail stores it varies between 4 minutes in department stores and 21 minutes in furniture stores, with an average for all lines of 12 minutes per interview. In industrial concerns it is scarcely longer.

Yet within those few minutes every actual sale must be consummated. Here, within the walls of one room, across one desk, and in the space of a few hundred seconds are focused the entire efforts of management, production, advertising—to stand or fall on the result of personal salesmanship. Here are the crucial minutes when a man must sell.

And because these selling minutes are so few, so precious, it is important to save them for actual selling, to free the hands of salesmen for the important work which can only be done face to face with the buyer.

It is here that the business paper is of untold value to the manufacturer. For it reaches *in advance* the man behind the ground-glass door. In its pages can be said beforehand everything that must be said as a preliminary to effective personal selling; to get introductions and explanations out of the way; to create friendships and reputations; to clear the decks for two-fisted selling.

Because the business paper of today deals so authoritatively and constructively with the problems of its industry, profession or trade, it not only passes through the ground-glass door, but it is read, thoroughly and attentively, by the man who constitutes the manufacturer's most important single objective. His interest makes the business paper the key to saving crucial selling minutes.

THIS SYMBOL *identifies an* ABP *paper . . . It stands for honest, known, paid circulation; straight-forward business methods, and editorial standards that insure reader interest . . . These are the factors that make a valuable advertising medium.*

This publication is a member of the Associated Business Papers, Inc. . . . a cooperative, non-profit organization of leading publications in the industrial, professional and merchandising fields, mutually pledged to uphold the highest editorial, journalistic and advertising standards.

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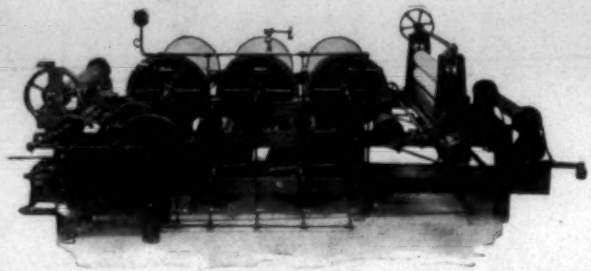
THE ASSOCIATED BUSINESS PAPERS, INC.
TWO-NINETY-FIVE MADISON AVENUE · NEW YORK CITY

For Quality Rayons Use The Johnson Warp Sizer



MANY mills today could produce higher quality rayons and rayon mixtures if they would employ the right sizing method.

Some are using the old cotton system. This system of course will do for certain deniers and types of yarns, but for finer quality goods, to which all mills come sooner or later, the silk system MUST be employed.

An essential part of this system is the Johnson Warp Sizer. With this machine you can size at LOW temperatures and HIGH speed. On the 5-cylinder model, for example, warps of 4000-5000 ends, 150 denier yarn have been sized at less than 2 lbs. steam pressure at an average of 26 yards a minute. This means you not only get greater production on the sizer, and softer, more pliable warps, but also means you get greater loom production.

This is one more reason why more than five times as much rayon is sized on the Johnson Sizer as on all other rayon sizers in the world combined.

CHARLES B. JOHNSON

Piercy St., Cor. of Holsman
Paterson, N. J.

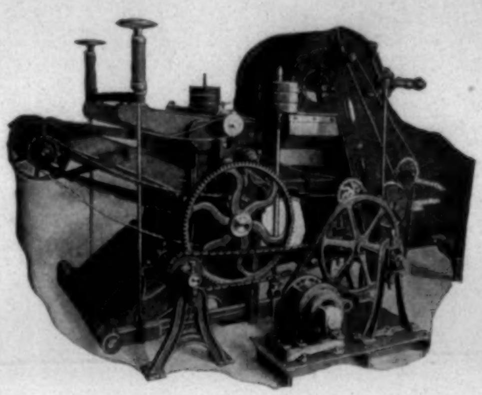
REPRESENTATIVES

Carolina Specialty Co.
Charlotte, N. C.

Textile Accessories, Ltd.
Manchester, England

Joseph Barnes
New Bedford, Mass.

Elbrook, Inc.
Shanghai, China



Continuous Hydro-extractor

This machine will expel waste dye and bleach liquors from saturated cotton, at the same time passing it forward to your Drying Machine through a continuous series of operations.

Gives more uniform results with less expenditure of energy and avoidance of intermittency. Many other advantages.

Reduce your costs by hydro-extracting saturated fibers this modern way.

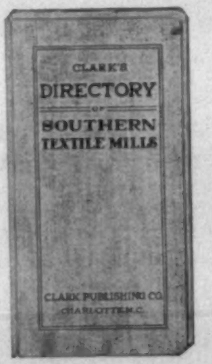
C. G. Sargent's Sons Corp., Graniteville, Mass.

Builders of Cotton Stock Drying Machines
Yarn Conditioning Machines, etc.

Fred H. White, Southern Representative, Charlotte, N. C.

Clark's Directory

OF SOUTHERN TEXTILE MILLS



Gives capital, number of machines, officers, buyers, superintendents, kind of power used, product and telephone number, of every Southern Cotton Mill. Also contains sections: "Hints for Traveling Men," and Clark's Code Word Index.

Printed on thin paper, cloth bound, pocket size.

Two Revisions Yearly keeps this Directory Accurate and Complete. A copy should be in the office of every concern which sells to Southern Textile Mills and in the pocket of every Salesman who travels this territory.

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Charlotte, N. C.